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## THE

# ORLENTAL MOTOR 

A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT
$\qquad$
$\qquad$


China's Broadway-Nanliing lioad, Shanghai,

# LET YOUR NEW CAR THIS SPRING BE AN 



The Car that has a record-breaking performance for long-time fuel consumption-The Car that ran 4,370 consecutive miles without an engine stop in 7 days and 7 nights, sealed in high gear, and averaged

### 20.3 MILES PER GALLON



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## HAUL

 BY
## TRUCK.



To the naked eye the inner surfaces of your antomobile engine looks perfectly smooth. Under the magnifying glass you will find that they are actually covered with millions of sharp little teeth. When the metal surfaces are covered with a substantial film of lubricating oil they slide readily by each other. When the heat of the engine turns part of the oil to sediment, these little metal teeth are exposed. Then when the surfaces rub together there is friction. Friction means wear and expense. To keep these metal teeth covered it is essential that your lubricating oil resist heat so that sediment will not be formed. Veedol resists heat in an exceptional fashion because it is manufactured by the Faulkner Process. It reduces the amount of sediment 80 per cent. That means a substantial reduction in your operating cost. We suggest that you try Veedol as we are certain that it will give you better lubrication.

Take out the thin oil to-day and test Veedol VEEDOL Oils:-Zero Light Medium, Heavy and Extra Heavy, Taels $\mathbf{1 . 7 2}$ per gal. can.
VEEDOL Transmission Gear Oil, Taels 1.21 per gal. can VEEDOL Greases:-Light, Medium and Heavy CupLight, Medium and Heavy Graphite-Gear Compound, Taels 35 per 1b. can.

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It Runs Better the
Longer It Runs
WHAl \&ratar thine can be sail of a motor car than that it runs better the longer you drive it? The Willys-Knight sleeve-
valve motor improves with use. Its dependable, smooth power; its quict operation, fine appearance and freedom from repairs, account for the enthusiasm of the numerous Willys-Knight owners in China.

## The Central Garage Company

Vol. II.

# THE ORIENTAL MOTOR 

MOTORING - MOTOR BOATING - AVIATION.
A Monthly Magazine devoted to Motor Interests in China and the Far East generally. FIRST NUMBER, APRIL, 1919.

Registered at the Chinese Post Office as a Newspaper.

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## T虾上

# ORLENTAL MOTOR 

A Monthly Magazine devoted to Motor Interests in China and the Far East Generally.

## MOTOR INVASION OF NANKING.

## Famous Chinese City Has a Car Population of Thirty three.



A I'art of Nanking's Motor P'opulation-The Min!s Tombs and P'urple Monntain in the Packerreund.

NINKTN(x, famed for its part in the revolutions which brought about the founding of the present Ropotlic of ('hina, known for its 'Tartar ('ity, its dhirty miles of ancient city walls, and its Pupple Mombain, an ambient cily playing a part of prominence in all phases of ('himese history is experiencing an invasion of modern means of tratheporta-tion--the motor cear. 'The quietate of the ancerent Whes Fimperors as they seep in their undiceovered tomb: atit thas foot of the Purple Mountain is being broken by the staccato notes of the exhaust of motor cars
 Growing pains from the rapid developmochl of the mot if : :l







 are owned he 'hinese'


















 of the country surounding

 with their characteristic disregard for hazards, navighte on



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 a when omt | : various articles displayed in the shops













Must of Nanking's C'urs are of the Light Type.
tor of the car will become entangled with the wares oi the owner of the advantaceous corner site shop bringing

 interpreted by the imagination into what the shopkeeper thinks of the motor car industry in general.


 'I'h difliculty of navigating the narrow passageways with





Whe ry Ninatomi, Buan Varr liani-


Jriln T........... H.
11........

The Examination
Hall, having Stalls
for 30,000 StudentsOne of Nanking's Antiquities.


From all of this may bo gleaned the fact that motor cars are literally pushing their way into Nanking and that old city staid by the dignity of centurles is taking to the pushing and motor cars are being received with increasing favor.

Motoring in the ancient capital, however, has its disadvantages due to the fact that the population isn't sufficient to warrant the establishment of a service and repair station. If anything goes wrong of more than a minor rature it is necessary to bring a mechanic: to the city from Shanghai in order to effect the repairs. It would seem then that every motor owner should be his own mechanic or employ a chauffeur who understood the working parts of the car. This, coupled with the unfavorable streets of the city, constitutes the obstacle which has hampered the complete invasion of the paesenger car.

So far the city has paid no attention to the motor car as a fraighting venicle for obvious reawns. Nothing but a light truek of the one ton trpe could hope to pase tinough the native streets and the lattor would aceompli h it only with extreme difficulis. However, thare is hope for the motor freighter for the eity of Nanking cower- a land terwitory much largor than that of the city of shamghai mad
the use of rapid transit would mean much toward increasing the efficiency of the city's business.

There is another opportunity offered to the motor, which has been tried once and then abandoned but which should prove successful, that of the motor bus. At the present time, in order to facilitate moving from one part of the city to the other more quickly, the Nanking City Railway, a steam operated line, is emploved. This runs an hong intervals and any trip must he plamod ahsad of time in order to make the necessaly commedions. With a m.otor hum Astem running along the roadway, which follow- for the mose part the line of the milload right of wat, and whech is: one of the city's best highways, a fen or fiftew minute service could be operated to adrantage. (:analal investigation would mem to indicane thath surh a line could be greated ati a profit despite the abandening of the firet

 passbitities due to the increasing numb or u! whticts who are coming to China and the Far Vast, Bn-1 in whome tind it dearably. (1) stin! in that cily for a dal or ano.
(Continued on Page 49.)



## THERE'S AN ART IN DRIVING.

Unelul Suggestions for the Beginner and Some of the Mistakes Frequently Made



I-












 in I
















 ing the wheel to be the fare of a chock. Simme drivers fins?














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 fration was conducted recontly among a number of women


 the pribit harols comethed for an matant while the -hift is

 their cars, these owrers stated that during the early life of When ars the rpair hille were hob haathe of the fact that their wives could not start the car smoothly, and shift $g$ sur




Driving up and down grades is, to the experienced driver, no more trouble than driving along a level stretch. There is no need to burn brake lining unnecessarily. when going down a grade. As a matter of fact many grades do not require the use of the brakes at all, theugh most drivers use them. There are forms of resistance which can be put into use to retard the motion of a car, the brakes and the engine (when it is not firing). The greater the engine speed when the engine is not firing the greater the resistance it offers so that if the gears are in second speed the car will roll down a hill slower than in high. In first speed the speed will be slower than in second. The brakes should not be used on long grades unless the car travels too fast in first speed. Then the brakes may be called upon merely as auxiliaries. The next time you have occasion to travel down a very steep hill, shift into first speed, turn the ignition switch to off position and hold your feot on the brake pedal, but do not apply the brakes. You will find you have the car undor complete control and that the brakes will not do one-tenth the work they formerly wore called upon to do.

In ascending grades many drivers keep the gears in high until the engine begins to labor and then the shift is made. It is believed that this is wrong, that the shift should ho made before the engine labore. Some drivers insist upon their car: taking every hill on high will tho result that the engine simply knocks until the crest is reachod. 'These : no need for this. The Eumopean domer with a fomespered tramsmishon us: the intermediate gears quik focquenlly to avoid ally undus stress on the engine and ofler patits of the rar.

A mistate ofton is madre by many drivers in assuming

 road is rough, as a cobble road, the shower bun arment ther
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(Continued on Page 40)

## THE MAKING OF THE COMPOSITE CAR OF AMERICA.



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 more tham ever beoming of paramount importance. Ac-







 expense. I'rice, however, is goiner up, and it is probsable that


 Ih Ib. - - ('ar in the proportions that the calculated values ul' the sperefifations give it. Lines and contour are pictured






 1...masam, before taking up the ear in detaikd form.
 average design, and that is by computing the avaly- Irom



engines that further comparison would be necrlless. It should be remembered that of the $2,000,000$ cars made during 1919 (the figure of $2,000,000$ arrived at hy catimation of reported preduction) at least $1,250,0$, (0) of if em aro mater 109 in. wheelbase and have four-cylinder engines. So, our avcrase oar is the rosult of a composite average of 1 he mumber of chassis models.

In brief, the mechanical make-up of the car is as followe: 1 six-c:dinder engine, whose power is tramsmited by a dry dise clutch to a thece-peod fonword and revere tranemiseion, hoth of theee units leany in single asmonbly with the engine. From the transmission the power is delivered to a universal joint directly in back of the transmiscion to a hollow propellor shaft, to the second universal joint just in fiont of the rear axle. From here, the floting drive shafts receive their power from a spiral bevel pinion and ring gear, fify-reven per cont. in the majonty. Wood wheels are wed and the tire size is 33 by 4 inches.

The engine is of the L-head type. Its six cylinders have a bore of 3.34 in . and a stroko of 4.92 in ., visimy it stroke hore ratio of 1.47 to 1 . Last yows avorato car had a stroke bore ratio of 1.22 to 1 , and this inveres in ratis in this year's model has only one interpretation: Enerine speeds are on the increase. The average engine turns over $\because, 375$ times per minute whon delivering its maximum horseprwer of 50.1.

The cylinder bead is detachalle. About fifteen $7 / 16$ in. bolts hold the head to the engine block. Since the ignition is single, there are six spark plugs in the head, together with the priming eolps. The wires leading to the epark plugs are not inclosed, hat are lodd rigidly by a stray iron frame which is held in plate by two of the folle that lrold the romovable head in place.

The engine lack is common with the uphne halle of the crankease and jost whether this (ngince has at exte almmimmon oil pren or a prewsed eteet oil pmon is not delinitoly to be







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cylinders six and one. for example, will be the same to one-

 ate 1 and on the main bearingis.

The camshaft has three bearings. These are tubular beatings and the wat to ere at them is to pull the font mat
 for the bearings are three different sizes, the largest at the
 of the eamshaft an eccentric is placed, the purpose of which is dris: lh, oil fump Shiral ad for the ublownt. It is intereating for note that this
 majority.





 the bots and splated to all parts al thes ombins. Thid includes the cylinder walls, the cams and the camshaft





 Lubrication.



 to $1 / 0 \mathrm{lh}$. It. is divelopeet.



















(Continmed on Page 50.)

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mand by the serins fiehd, althengh variable, is kept within


 - ries motor.

If the car runs down hill, its specd will naturally in..... but at the same time the back voltage generated in the motor will increase because the auxiliary cell maintains the conrent carried by the field despite the decrease in motor
 4. Wain what the mofor bexmes a gemerator and pun!





The rentor lay lah molvine fied amd molvinge

 is holted to the pressed steel loonsing, its forward end being arym... I by a spring in order to relieve the rear axle of anmo. The ammature is qeared to one axle shaft and the fiotd member to the other one, thus eliminating the differenti:l
speed control is cffected by connecting the battery cells
 resistance in and out with each battery combination. In this way four different speeds are obtained.

The adrantages clamed for this construction over the

 une may - quicker, dangerous speeds are impossible on down grades and in stopping, the operation of the motor as
 brakom gand :1. nfoethimal kaw - inn reduced.
 analofs and conteri late: producing a total of about 2,000 .

## THE M.A.S. 227-SPEED DEMON OF THE WHANGPO



Lt. Antonio İ. Gice:tu
and crew of the M.A.S.

227 on board the Water

Speedster.

One of the two submarine chasers of the Italina Government now on the Whangpo River, Shanghai. Th sese craft have a 48 foot length, a 10 foot beam and a 3 ft. 6in., draft.

On a reement trial the MI. A. S. 227 made 32 knotr. She
is equipped with two 250 horse-power motors, 6 cyclinders each $250 \times 550 \mathrm{~m} . \mathrm{m}$. making 1,500 revolutions per minute. She is also fitted with silent olectric motors capable of az continuous run of six bouse. It was hate of the whe which worried the Anstrian Naty during the war

## AUTOMOBILE CLUB OF CHINA HOLDS ANNUAL IMEETING.

## Automobile Organization Plans Expansion for This Year.

Pans are being formulated as at rewult of the ammal meeting of the Autemobite ('lub) of ('hins: Shanghat, hed the: month fer an active expansion of the wedy amd an incerased participation in the motering interests of shanghai and the surpounding country. I memberaip empatign is to be launchod soon and it is expected that several thousand new names and active supporters will be added to the roll of the organization.

At the ammal meeting the reprete of the 198! committere of the club) was rated and :appowed as was the stolle-
 committoen was leld.








of the Y.M.C.A. has proved unsuccessful and is being abatidoned owing to latk of support. The chut hat guaranteed any deficit of the school up to November 1, but

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Ar. Chun libu-hion wpoted in He meetme that ther









# The Oriental Motor 

Motoring Motor Boating - Aviation<br> am! the fue fout daenallo<br><br><br>1 undunk Reprentrative Mr. C. Cohayne-Naylor, $3^{6}$-7-A Suuthampton St., Strand. W.C.

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The Eidtor will be platased at all times $\ell$, reveeve photographs, sketches or articles of churucter likely to be of interest to readers of this publicatton. It is understood that contributions ull not be peid for unless remuateration has been stipulatid and arranged fo. in adeance.

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Vul. II.
Shišillat, Aplif 1920.
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## EDITORIAL.

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 country and the people.

If the loan is to be turned into efficient channels of railway and highway development, free from the petty graft and squeeze which has heretofore characterized attempts at road building, motoring in China will experience an advancement which cannot be fully realized or estimated.

It is such an apparent fact that motoring must bo preceded by good roads that the formulation of such a statement seems childlike but it is only in this way that tha small market of China for motor cars, both of the passenger type and the freight carriers, can be best explained.

The sale of motors in China is at preseat kept within certain cities and localities of the country by certain well defined lines-these lines being passable roads. Further invasion is impossible until further highways are constructod. China's wealth may indicate a large potential field for the motor car manufacturers of the world, but China's physical road conditions make such statements mere guesswork.

It is obvious that if the lines of railway communication over the nation of China are to be vastly increased, a similar increase must be made in the total mileage of good traversable roads in order that each railway station of any size or importance will have a system of adequate arteries into the surrounding prodacing territory from which this railway center may be fed. The increase in road mileage will mean a greater succoss to the railroads because of an increased amount of freight. Again motor freightage and passenger carrying into smaller points which would be unprofitable for railway penetration will increase their markets and give them more to sond to the centers of cistribution.

With increased road mileage and increased industrial expransion and development in China, the motor exporters of the world will find a deluge of orders from the nation both from foreigners and from the Chinese themserves.

In previons editorials in "The Oriental Motor" has been discussed the possibilities of the development of track train transportation into the interior and of pascengey camying on a durge seale which would be made possible by highway butding and extension and the suggestion that an (onsertium of motor cer mambentures of the mations and their eomelated companies should be fomed to extond in foan to the Republice of (haina for the sold pmpere of builat ing a mational road sustem.

 munications, the Powers composing the Consortium



 cipate: in the bailding of thom. It is to ho hopnd that all of Hase facter will loe pres. tives so that in the exem that the loan is comednded phan orn
will be made along with the other developments for this crying need of the country.

In this connection, it would seem to be the duty of every manufacturer of the entire motoring industry and those interested in motors in China to give their immediate attention to the work of the Consortium, to give it their unqualified surport and to urge their own participating governments and the government of the Republic of China to inclede in the provivions under whis the isen of e. a section for the establishment and building of a national highway system.

## WATCH IOUR OIL INDICATOR.

If we could, we would print these few words in red capital letters, after the manner of the instruction books: "Change the Cylinder Oil every 500 Miles," says "Motor Life." Possibly such an unusual treatment of that little bit of advice would bring it home to a lot of motorists, but we suppose if it were painted in letters a foot high on every sign board in the country, the majority of car drivers would disregard it.

If there ever is a time when this advice is worth following, it is during the cold weather. Gasoline doesn't vaporize as well in cold weather. There is a certain amount of raw fuel that does not do its intended work of giving power, and it works down past the pistons into the crankcase, there to dilute the lubricating oil. (iasoline isn't a luhricant, and bofore long the supposed lubricant isn't a lubricant, cither. Sou congratulate youmelf on the small ammont of oil !aur motor uses, for the level keeps up remarkably well, judging from the indicator. Unfertunately that comsemient sams does not differentiate between oil and other liquids. A level is a level to it, no matter what the liguid.

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## THIS YEAR'S RACES, CONTESTS AND TOURS

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## MURPHY WINS LOS ANGELES CLASSIC．

## Noviate Driver Dedicates Pacifie Coast Speedway in 250 Mile Drive

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| Goorlson（Frontenac | ．．． | 2：25：01．50 | 100.6 |
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| Heamme（Cllevmert） | $\ldots$ | 2；33：22．47 | ！ 7.4 |
| Mulford（Meteor） |  |  | 90.2 |
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FOR ESTIMATES OR FURTHER INFORMATION



## U. S. MAKERS FAVORING EXPORTERS.

Britsh Manufacturers Are Not Ene wuraging Foreign Trade, Captain J. E. Inch Says.





 atembing to ('aptain J. E. Inch, managing diractor of the






Drriving in the L'nited states from shanghai during the










 in Jamurr-

W:hile in England, C'aptain Inch made as tour of the
























( pitain Inch also arranged for the China agency for

 market

The lator situation in Eingland, according to Captain



 intproved over the same period one yeas "Hen wh 11 he witt
 labor situation in Fingland will get back to nommal before
 Bunc vated state.

Alter spending three wesks in England, C'aptain Inch

 and attracted record breaking crowds, he says, but as the
 on the J'remier, the Chandler, the Cleveland, Hupmobile and the lodge he did not see present possibilities in adding


"Motor prices both in England and the Enited States," 'mplain Inch says, "will undoubtedly go higher according
 II wo countries. Althourh the manufacturers of both countries are making every possible effort to supply the fust-war demands, there is still going to be an appreciable

 now practically an every day necessity for the business man
 if comen am ans to the manufacturers. When I left England



## THE LITTLE THINGS ABOUT YOUR CAR．
























 inch，depending upon the ignition system，carbureter adjust－ timent and domant at maton．

Xlany praplo monder why their cars do not always run

 ans blow of plow in the different cylinders，or even if they


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 appearance could be kept longer．


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 the frame in place hat slipped out and the side rail 1.1 ＇mher a Intio as it－abl．







 own on unfamiliar．Serions accidents lave occurred be－




## Goodyear Tires Are 畋lanced Tires

> Most motor ists have used some that were not -
> some that gave weay in one part long before another

THE Goodyear tread is not made to last half as long as the fabric, but just as long as the fabric. The fabric is not made to last half as long as the tread, but just as long as the tread.

The body and the tread are made to be life companions and, when run under normal conditions, give a surprisingly uniform mileage.

No one part of Goodyear Tires is knowingly made weaker or stronger than another part, but as nearly as it is possible, all parts are made with uniform strength and equal mileage-giving qualities.

This ${ }^{2}$ balanced construction makes it possible for the motorist to get the last mile and full value out of every Goodyear Tire.

Goodyear Tires are made in both millimeter and inch sizes.

GASTON, WILIIAMS \& WIGMORE (F.E.D.), INC.<br>Wholesale Distributors



## AIR CURRENTS.

## Being Notes from all Parts of the World on Aircraft Subjects.


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A half-million dollar commercial Aviation company has






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Airplanes carrying passengors, mail and express are now operating on routes connecting Geneva, Lausanne, Berne, Burich and Lucerne, Switzorland, according to recent adviess.
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# SERVICE IS <br> THE KEYNOTE OF OUR ORGANIZATION <br> <br> LET US SERVE <br> <br> LET US SERVE YOU! 

 YOU!}

## BUICK-CHEVROLET-CADILLAC

H. S. HONIGSBERG \& Co., Inc., 40 BUBBLINC WELI

Phone W. 1234
SHANCHAI

# MOTOR BUSINESS INCREASING IN SHANGHAI. 

Report of Annual Mecting Shanghai Horse Bazaar and Motor Co., Lid.





























 whtamine cans, accessories, cte. from abroad.









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 Whe multimillionaire I nele (ieorge and several excited ladies, It central tigure a bally his ciramd Nephew-I Incle Girmy.




















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 company are: (i. M. C'. Trucke, L'nited States Tires and 11.01 are

## THEY RE SELLING THEM BY THE DOZEN NOW.

## Fords Have Gotten into the Commodity Class Like Eggs.


 oceat to have imeratad hem. This fory, howerier, is a real 4ialy 193\% in I loun.
 Apontments, recobly wolt imto a lound wewn and atoded

'How many do you want?" was the question asked, Jinced of inur."
"-1n." replied tho Chimes. "Can do, one dozen."


The Goodrich Adjustment Básis : Silver town Cords, 7,000 Miles Fabric Tires, 5,000 Miles


## Name and Brand

 Best in the Long RunGOODRICH is a name that has been molded on more automobile tires than any other name in the world.
Stamped there, it has stood responsible for millions of tires, and has kept faith with every buyer of them. It is a voucher for the highest form of automobile tire service. Whether a Goodrich Tire is a graceful, easy-running Silvertown Cord, trademarked with the Twin Red DiamondsOr a Fabric Tire with iis exira-wide, black tread-Goodrich long experience in tiremaking is in the tire -
And the Goodrich pledge of full service value is back of it.

## Goodrich Tilpes

## FURUKAWA \& Co., Ltd.

SOLA AlifiNt's foli (IllN. 1

# HONGKONG MOTOR CLUB REPORTS PROGRESS. 

Autimabile Association Held Annual Meeting Last Month






























 Br mim IVor lima it is also propused to commence the


 Which we did with much pleasure. It is particulerly gratify-



 in has memour in supplying information asked for at various Shou- - of aton a phomiate the attemtion given by him to ownelbeints which we have math
























## FUTURE OF N. Y. BUS REMAINS UNSETTLED.

## Appropriation of $\$ 1,140,000$ is Held Up With Plans Described as Incomplete.

 (Wh. . .fficient system of bus operation still remains an uren question. After considerable discussion in which the opration of a "bus system" throughont the city was des-


 17. . . di in the March number of "The Oriental Motor" was




 with the largsest scheme that could be devised he felt that 11. .heminh ef the plan had not as yet been completely worked
 declared that the city wanted the best busses that could be chitumal


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# NOW 675 TAELS 



## FORD TOURING CARS

This is an unprecedented opportunity and should be taken advantage of at once THE FORD REQUURES NO SALES ARGUMENT Sole Agents

## DODGE \& SEYMOUR (China) Ltd.

 89-91 Rue Montauban SHANGHAI
## NOTES FROM HERE AND THERE























 chargingr room with the latest equipment.




























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## FROM THE CHASSIS UP TO THE FINISHED CAR.

## H. S Henigaberg and Co. Ine Represents a Vast Outlay of Mororins industry




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Tlow ly at dint umiturial name North China is well











 twh compmition. From its inception the corporation has - il al as a arial blazer in the development of motoring and the distribution of motor cars in the Republic of China.



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11. 8. Hanigetor. Ite manneriug dit tor and his athant. 11. 1. Rimk., h- 1 in matant won ho with the field curad hud mains smb 1 twinl arvice to owners of ar- which dhes rypmont to i- found neceesary. The
 the new ar illmstrate- his varetul sulervision.

The new motor upon arrival in Shanghai goes first to the Gordon Road plant where it is unpacked, assembled and tunod up undor expert supervision before it is given to its ownier or placed in the show room. An at solute guarantee of satisfactory periormance is required beforo any car is pormitted to leave this station.

At the Medhurst Road station is the plant which might bo termed a motor factory. Here are the battery, paint and varnish, body building, machine, storage, assombling, and other departments necessary to the maintenance of a modern motor car in China In the United States the manufacturer gives the service which is duplicated here by the Honigsberg corporation. All work is done under trainel supervision and such rooms as the varnish room and other departments are planed along the latest sciontific lines bnown to the world's third largest industry.


Showroom on the right entrance at 40 Bubbling Well.
T'he body building and finishing departmont comprises one of the large parts of the corporation's workings and is at all times at maximum spect tuming out the latest types seasoned and suited for climatic conditions in China, which aro peculiar to this prat of the world and which for the mosit part have not been taken into comsiteration by Amerj-


One of the Showrooms-Bubbliny Well Plant.
can manufactures. In this connection. the (onnany designs its own models which rank equally with those turned out by the designers of the large motor mantucture aithe United States.

There is not a more delicate operation in the entire industry of building a motor car than thet at the finsi-hine. the painting and varnishing. While the "ysumes mat not make the car, it adds much to the desirelility of it and the manufacturers have to recognize this. The $H$ mas
 of body funshing, as their finished prodichs womb indis?le
 varnshing room, which is kept free from duat ant forsion particles and is heated to a temperature which will insure an even and glossy finish. To take further precaution in the deving of the bods, from the firat wamish biom it is taken to at drying room which is emtion dat ! mont and



The staff al the Medhumst Rewad plant is comprand of










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 Ot a neximan ,how which came three years later in 1913 at


 from the old nriental Motor Company, then conducting the














In an industry which has beceme the inied largest of the world as bas the manufacturing and marketing of automobiles, it becomiss necessary for every unit in the vast.


Battery Service Department-Medhurst Road Stution. commercial fictd of the world covered to be constantly on the alert, ready to offer to the publie the bater in dewign, mechanism, sarvice and acessanices. The wrentzation of
H. S. THonigstorg and Co., Tne., has leen l mikd umen a keen appeciation of this alerthers and upon a keen vonse of obligation and responsibility to its patrons.

The showrooms of the ompany are centants the center of the latest in tio motoring word. No expenes is spared in bringing to China at the same time ther are being introduced in the United States, the models of the season appeathing. No distribnting cataldishment in any of the larger sitios of Ameriat ara able th satisty the dewires of the if dientele with any morerap idity that this exmpeny in (hima.

Kopresentation is given fur cors whely keown in the word matrets including the (adilne, the Chermot. Buick. and Packent. Tor this is added the Stemant and lutoent
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## LATEST SPECIFICATIONS OF U．S．GASOLINE PASSENGER CARS





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MUS゙ITOR
$6-3 \frac{1}{3} \times 4 \frac{1}{2}$ Djneto $\ldots . .$.

| Model | Motor | Ignition | Starting Lighting | WB | Tires | Rims | $\underset{\text { Pass. }}{20}$ | $\underset{\text { Pass. }}{\substack{5-}}$ | $\begin{gathered} 7- \\ \text { Pass. } \end{gathered}$ | Sedan | Model | Motor | Ignition | Starting Lighting | WB | Tires | Rims | Pass. | Pass. | $P_{3}^{7}$ | Sedan |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONRO |  |  |  |  |  |  |  |  |  |  | PRE |  |  |  |  |  |  |  |  |  |  |
| $\stackrel{-9}{ }$ | 4-319412 |  | A-Lite | 115 | $32 \times 3 \frac{7}{2}$ | SS | \$1440 | \$1440 | ...... |  | ${ }^{6-\mathrm{D}}$ | 6-33x5 ${ }^{\text {ch }}$ | Delco | Delco | 127 | $32 \times 4 \frac{1}{2}$ | SS | 43003 | +4300 | \$4300 | 57.0 |
| MOON |  |  |  |  |  |  |  |  |  |  | R \& | NIGBT |  |  |  |  |  |  | 2150 |  | 700 |
| 6-48 |  | Delco Delco | Delco Delco | 118 122 | $32 \times 4$ $35 \times 5$ | SS | 2285 | 8185 |  | $\$ 3185$ 3750 |  | 6-3 ${ }^{4} \mathbf{4} \times 2 \times 4 \frac{1}{2}$ | Wagner ${ }^{-}$ | Wagner | $\begin{array}{rl} r & 115 \\ r & 127 \end{array}$ | $\begin{aligned} & 32 \times 4 \\ & 32 \times 4 \frac{1}{2} \end{aligned}$ | (2D |  | +3150 |  | 2700 |
| $\begin{aligned} & \text { 6-68 } \\ & \text { MOORE } \end{aligned}$ | 6-31 $\times 5$ 年 | Delco | Delco | 122 | 35x5 | SS |  |  | \$2750 | 3750 | $\stackrel{J}{\mathrm{REO}}$ | 6-312 $\times 4 \frac{1}{2}$ | Wagner | Wagner |  |  | $\frac{1}{2}(Q D$ | 3150 | +31.0 | 31.5 |  |
| 30-F | 4-33943 | A-Lite | A-Lite | 110 | 30x3랄 | QD | ...... | 1095 | ...... |  | $1920$ |  | N. E. | N. E. | 120 | 33x4 | SS | ¢1750 | 1750 |  | 2750 |
| MURRA |  | Dixie | sth | 128 | $34 \times 4 \frac{1}{2}$ |  |  | 3500 |  |  |  | 4-43x 6 | Bosch | Wsths | 131 | $32 \times 4 \frac{1}{2}$ | SS | 42.50 | 4250 | +42.50 |  |
| NASH |  |  |  |  |  |  |  |  |  |  | ROA |  |  |  |  |  |  |  |  |  |  |
| 681 | 6-33 $\times 5 \frac{1}{4}$ | Delco | Wagner | 121 | 33x4 | SS | 1595 | 1595 | 1765 | 2225 | C-6-54 | $\begin{aligned} & 6-3 \frac{1}{2} \times 5 \frac{7}{2} \\ & \hline \end{aligned}$ | Bosch | Bijur | 123 | $32 \times 4$ | SS | 29.50 | +2975 | 3075 |  |
| NATION | NAL $6-3 \frac{1}{2} x$ | Delco | Wstbs | 30 | $32 \times 4 \frac{1}{2}$ | SS | 3500 | +3500 | 3550 | 4700 |  | 6-32 $\times$ 5 51 | Bosch | Wsths | 136 | 35x5 | SS | $\ldots$ |  |  |  |
| NELSON |  |  |  |  |  |  |  |  |  |  | SAXON | 4-33 $\times 5$ | Remy | Wagner | 112 | $32 \times 33$ | SS | ... | 1785 |  | 26 |
| D | 4-38 $\times 4.4$ | Bosch | U.S.L. | 104 | $32 \times 4$ | SS |  | 1700 |  |  | SAYER | 6-3x | Delc | Delco | 118 | 3384 | SS | 1895 | 1895 |  | 2895 |
| $\mathrm{N}_{\text {I }}$ | 6-3 | Delco | Delco |  |  | SS | 00 | +2900 |  |  | SCRIP | -BOOTH |  |  |  |  |  |  |  |  |  |
| NORWA | LK |  |  |  |  |  |  |  |  |  | B-39 |  | Remy | Remy | 115 | $32 \times 4$ | SS | †1425 | 1425 |  | 215 |
|  | 4-321 $\times 5 \frac{1}{2}$ | Delco | Dyneto | 116 | $32 \times 3 \frac{1}{2}$ | SS |  | 1235 |  |  | SENEC | 4-318 $\times 4 \frac{1}{2}$ | Conn | A. C. | 108 | $30 \times 3 \frac{1}{2}$ |  |  | 1185 |  |  |
| OAKLA | ND |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 34-C } \\ & \text { OLDSMC } \end{aligned}$ | $\begin{aligned} & 6-2 \frac{1}{19} 9 \times 4 \frac{3}{4} \\ & \text { OBILE } \end{aligned}$ | Remy | Remy | 115 | $32 \times 4$ | SS | $\ddagger 1165$ | 1165 |  | 1825 | $\stackrel{20}{\text { SKEL }}$ | $\mathrm{O} \mathrm{~N}^{64 \times 5 \frac{1}{2}}$ | Bosch | Wsths | 138 | $33 \times 5$ | SS |  | +5800 | 5800 | 7500 |
| 45-B | $8-28 \times 4$ 年 | Delco | Delco | 12 | $33 \times 4 \frac{1}{2}$ | SS |  | $\dagger 2045$ | 2045 | 2950 |  | 4-312x 5 | Conn | Wsths | 112 |  | SS | 1245 |  | 1245 |  |
| 37-A | $6-218{ }^{1} \times 43$ | Remy | Remy | 112 | 32x4 | SS | 1450 | 1450 |  | 2145 | SPAC |  |  |  |  |  |  | 295 |  |  |  |
| OLYMP | IAN |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { STAN } \\ & \text { ST } \end{aligned}$ | ARD | \%A.Kent |  | 90 | 28x3 |  | 295 |  |  |  |
| ove | $4-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Conn | A-Lite | 116 | $32 \times 3 \frac{1}{2}$ | ... | 1240 | 1240 | ...... |  |  | $8-3 \frac{3}{4} \times 5$ | A.Kent | Wsths | 127 | $34 \times 47$ | SS | 3000 | $\dagger 3000$ | 3000 | 4800 |
| 4 | $4.3{ }^{3} \times 4$ | A-Lite | A-Lite | 100 | 30x $3 \frac{1}{2}$ | QD | 945 | 945 |  | 1575 | STAN | EY |  |  |  |  |  |  |  |  |  |
| OWEN- | MAGNE' |  |  |  |  |  |  |  |  |  | Steame | 2-4x5 | ..... |  | 130 | $34 \times 47$ | SS |  | 4275 | 4275 | 6100 |
| W-42 | ${ }^{6.4} \times 5 \times \frac{5}{2}$ | Bosch | Own | 142 | $35 \times 5$ | SS | ...... |  | 7000 | 7500 | STEAR | 4-33 | A.Kent | Wsths | 125 | $34 \times 4 \frac{1}{2}$ | SS | 2475 | 245 | 26 | 3450 |
| PACK ${ }^{\text {3-35 }}$ | RD |  |  | (136 | $35 \times 5$ | SS |  |  | (5550 |  | STEPH | ENS |  |  |  |  |  |  |  |  |  |
| 3-25 | 12-3 x5 | Delco | Bijur | \{128 | $35 \times 5$ | SS | +5200 | 5200 | \{5250 |  | Salient | x $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ | $\frac{1}{2}$ A-Lite | A-Lite | 122 | $33 \times 4 \frac{1}{2}$ | SS | 2050 | $\dagger 2050$ | *2050 | 3050 |
| PAIGE |  |  |  |  |  |  |  |  |  |  | STUDE | BAKER |  |  |  |  |  |  |  |  |  |
| 6.39 | $6-3 \frac{1}{8} \times 54$ | A.Kent | G\&D | 119 | 33x4 | SS | $\ddagger 1670$ | 1670 |  | 2395 | E.H. | $6-3 \frac{1}{2} \times 5$ | Wagn | Wagner | 119 | $32 \times 4$ | SS | 178 | 17 | 178.5 | 258 |
| 6-55 | 6-32 $\times 5$ | A.Kent | G\&D | 127 | $33 \times 4 \frac{1}{2}$ | SS |  | $\dagger 2300$ | 2195 | 3095 | E-G | 6-388 $\times 5$ | Wagne | Wagner | r 126 | $33 \times 1 \frac{1}{2}$ | SS |  |  | 2250 |  |
| PARAG | ON |  |  |  |  |  |  |  |  |  | Lightsi | EJ $3 \frac{1}{8} \times 4 \frac{1}{2}$ | Wagn | Wagner | er 112 | $32 \times 4$ | SS | +1635 |  |  |  |
| PATERS | $\begin{aligned} & 4-33 \times 5 \frac{1}{4} \\ & \text { SON }^{2} \end{aligned}$ |  |  | 122 | $32 \times 4 \frac{1}{2}$ | SS | 3000 |  |  |  | $\begin{gathered} \text { STL } \\ \hline \end{gathered}$ | $4-48 \times 6$ | Delco | Remy | 130 | $32 \times 4$ | SS | 32.50 | 3250 | 3350 |  |
| 6-47 | 6-34x ${ }^{\frac{1}{2}}$ | Willar | Delco | 120 | $33 \times 4$ | SS |  | 1695 | 1725 | 2600 | TEMPI | AR |  |  |  |  |  |  |  |  |  |
| PEERL | ESS |  |  |  |  |  |  |  |  |  | VEL | 4.3 | Bij | Bijur | 18 | $32 \times$ | SS | 268 | 2685 |  |  |
| 56 | 8-3145 | A.Kent | A-Lite | 125 | 34×412 | SS |  | †3050 | 3050 | 3900 |  | 6-31 x | Bijur | Bijur | 115 | $32 \times 4$ | SS | 1785 | 1785 | \$1950 | 26.5 |
| PIEDM | ONT |  |  |  |  |  |  |  |  |  | WEST | OTT |  |  |  |  |  |  |  |  |  |
| 6-40 | $3 \frac{1}{4} \times 4 \frac{1}{2}$ | Remy | Remy | 122 | 32x4 | SS |  | 1865 |  |  | C-48 | 6-32x $\times 5$ | Delco | Delco | 12.5 | $32 \times 4 \frac{1}{2}$ | SS |  | 2*90 | 2890 | 4490 |
| 4-30 | $3 \mathrm{2} \times 5$ | Delco | Dyneto | 116 | $22 \times 3$ 3 | SS |  | 1395 |  |  | C-38 | $6-3$ 3 $\times 4 \frac{1}{2}$ | Delco | Delco | 118 | $33 \times 4$ | SS | 2390 | 2390 | :2790 | 3490 |
| PIERCE | E-ARRO |  |  |  |  |  |  |  |  |  | WILL | S-KNIG | HT |  |  |  |  |  |  |  |  |
| 48 | 6-4 $\frac{1}{2} \times 5 \frac{1}{2}$ | Delco | Wsths | 142 | $35 \times 5$ | QD | 7650 | 7650 | 7750 | 9250 |  | 4-3884. |  | A-Lite | 118 | $33 \times 4$ | SS | 1975 | 1975 |  | 29.5 |
| 38 | 6-4x5 $\frac{1}{2}$ | Delco | Wsths | 134 | $34 \times 4 \frac{1}{2}$ | SS | +7250 | 7250 | 7250 | 8550 | WINTI | ER |  |  |  |  |  |  |  |  |  |
| PILOT |  |  |  |  |  |  |  |  |  |  | 61 | 6-33x5 | Wsths | W'sths | 5 $119 \frac{1}{2}$ | 33x 4 | SS | ..... |  | ... |  |
| 6-45 | 6-31 $\times 5$ | Delco | Delco | 120 | 32x4 | SS | 1850 | 1800 |  |  | WINT | N |  |  |  |  |  |  |  |  |  |
| PORTE |  |  |  |  |  |  |  |  |  |  | 2 J | 6-33x51 | Bosch | Bijur | 132 | $35 \times 5$ | SS | 4250 | 39.50 | 12.50 | 53.5 |
|  | 4-4.6x6 ${ }^{3}$ | Berling | Wsthis | 142 | 35x5 | SS |  | $\dagger 9200$ | 9400 | ...... | *6-pas | enger. $\dagger$ | 4 -passeng | ger. | -passen | nger. |  |  |  |  |  |

[^1]
## THE LATEST BRITISH CAR PRICES.

With the coming on the market of further post-war models of the manufacturers of Ciront britain thas list has heon asain revisent and brought up to dato. It now includos as complete a list of tho principal makes as is possible to make at this time




"By This Sign Ye Shall Know Them."

## "Self Praise Is Poor Recommendation"

"We leave it to you"



## THE SHANGHAI GARAGE Co., Ltd.

OPERATING

THE STAR GARAGE AND THE EASTERN GARAGE
Our Main Show Room, at Star Garage, 125 Bubbling Well Road, Shanghai.

# CLOSED CAR MAY BE ULTIMATE TYPE 






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## AN EXCEPTIONAL TRUCK

## OPPORTUNITY



WE NTILL HAVE I HEW

## WICHITA 3-TON TRUCKS

in stock as illustrated above with stake bodies and detac'rable tires

## Will sell singly or in lots as Desired




 Inlet hose comections 1 "゙ diameter. Four-blade aluminum fim
 TRANSMISSION

Shorin..








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PRICE ACCORDING TO NUMBER DESIRED For further particulars upply to
O. E. BRINGEWATT


Several Trucks are Still in Original Cases Convenient for Shipment to Outports Complete stock of spare parts including tires


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iscluding

## LIABILITY TO THIRD PARTIES. DAMAGE TO, OR LOSS OF, CAR

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## ADDITIONAL BENEFITS

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AbliNTS-

## JARDINE, MATHESON \& Co., L†d., SHANGHAI,

TIENTSIN, PEKING, HANKOW. TSINGTAO







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 this kind. All drivers should take advantige of sture show wimbuws which show a retlection that is a helpful guider









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# TIENTSIN CLUB HOLDS ANNUAL MEETING 

Report States Work to Begin Immediately on Peking Highway.

Work will be started ahmost at once on the Peking'Tientsin highway, according to the report made at the annual meeting of the North China Motor (Ilut), at 'lientsin on March 9.
"Concerning the Peking Road, after considerable trouble we may at last consider this 'au fait accompli,' as work will be started almost at once," W. A. Davis, secretary of the (Shu) salys. "The (hut) !as to thank Ms. Ilsime II, i Ling for the efforts he used to carry the seheme thromeh Mr. If simg has arranged a lexin of $\$ 1.50$, (0) 0 , with which to build the highway and has oblained the consemt of the govermment to :sssmme the expense of building the mexesam? bridges along the route. 'Ithe road will the of wreal walle 10) motorists and we feed that we have dome : mal mation al good by the efforts which have beon pur forth for do : ace imb plishment."



insurance companies to the members of the club. It is in excellent financial condition and is proving a real power for advancement in the motoring circles of the territory which it covers.

In comnection with the opening of the Peking-Tientsin road, the "North ('hima Daily Mat" has aliowed a cup for competition over the highway
limkes governing the compertition hate mot as bet been
 teresting themselves in the competition and an international
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AND

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And various lines of Accessories.
SHINGHII

## ENGLAND MAY HAVE NEW MOTOR TAXES.

Ministry of Transport Recommends Scale on Tonnage Basis.





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Agricultural tractors (used for road haulage) ..... 111
ignoultural tractors (not used for haulage) ...a few shillings

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vehicle.
Capacity. Dist. Dist.

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STUDEBAKER SALES $\$ 80,000,000$ IN 1919.
 I. the shanghai H. B. and Motor Co., enjoxed in 1919 its

 husiness probably to exceed $\$ 10,000,000$ net. Final surplus



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Sole Agents for China WAH CHANG TRADING CORP.

9 Ningpo Road, Shanghai.
'Phone C. 4461
Tel. Ad. 7006


AIR MAIL ROUTE MAY COIVE NEXT SPRING.
Shanghai-Peking Service Being Planned; According to General Ting Kinn.

An airplane mail service utilizing the 100 Vickers machines ordered by the Chinese Government will probably be instituted between Shanghai and Peking next pring, according to General Ting Kinn, director of the Department of Aeronautics of the Republic of China. The statement was made by the General during his recent stay in the city of Shanghai.

Chinese who have had the benefit of foreign training in aviation and aircraft engineerimg are being used is return to this country and entist in the service of the gevermment to make posible an efficion air wrice, has will.

 ritice.

In additions to the 100 V'íkeme madhime whith hame







site for a landing field is being selected at Woosung for the Shathenai untice and work will probably ba begun on it some time this summer. This fick will in lhte mathens
 licde. 'Tlie artators of the surver abe to the mained beth abroad and in China. Techmical experts of foreign
















# NORTH BRITISH AND <br> MERCANTILE INSURANCE CO． 

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Labor Troubles Still a Handicap American Chamber
Analyzes Situation．







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 increase over 1913，the last pre－war year，amounting to
 $\$ 21,744,115$
 Chamber draws attention to the part played by the depreciated value of sterling exchange in the above incuas－． In view，however，of the industrial troubles of 1919 which have had a hampering effect on the British motor indu－try． the Britisl export figures may be taken，on the whole， as indicating a big expansion in the near future．
 automobiles imported into the United Kingdom in 1919 are：－



 imports ores 1913 of $\$ 1,036,355$ ，in which year the total automobile imports into the $\mathrm{U} . \mathrm{K}$ ．were $\$ 37,054,215$ ．

 Olramber，that the value of the ean－impront into（ireat Britain from the United states，for instance，in 1918－1919，
 fall in sterling exchange．In other words，Britain has paid

# BIC REDUCTION <br> IN PRICE OF MICHELIN TYRES 

A New Stock Just Arrived

Owing to the favorable rate of exchange, we are offering, until further notice, 25 per cent. off price list, and a further 10 per cent. for cash payments.

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THE AUTO PALACE Co., Sole Agents. 362 Ave. Joffre, SHANGHAI. Tel. W. 465 Practical Motor Engineers and Dealers.



## U. S. COMBINES MOTOR AND CANNON.

Aircraft Corporations Tell of War Invention for Planes.

The Army Air Service of the l'nited States has which was used with such great suceess in the world watr. authorized the Wright Aeronautical ('orporation to make public the invention of an airplane cannon motor which, while driving the plane in flight, automatically fires in rapid succession shells an inch and athalf in diameter and weighing a pound each. According to the specifications, the chgim is a modification of the 300 horsepower II ispano suizat motor

[^2] A 37 -millimeter automatic camon is arranged oo at to lic atong the inside of the propeller shatt, the mu\%, promete ing through the hub of the propeller. 'Two mathine suns are altached to the same motor, all beeme opwated by the: engine

This type of airplame ordmamer is pessible omls hecamere it is part of the engime, aceording (o) the mathere If
 dirigibles.













IIS more profitable to insure your car BL:INR: a sment than afterwards. You have bought the
 the most suitable pulicy to protect that ar
 fullest possible protection and is the most generous to the car owner.

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INSURANCE ASSOCIATION, LTD.
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Latest Development Displayed at National Exposition this Month.




 lork.





 of the largest of the exhibitors, will show three types: the




 which has found distinct favor with sportsmon whose situabon gives greater facilities for over-water than overland
 cffics advantages for alongshore flying which are as far
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 the noise of the motor and from the wind, but afforded per-- .t vision




 French acrial aces, including Guynemer, Fonck, Nung -....
 :11. (1.111:



 twelve. The coupe is to tho air what the luxurously finished limousine is to the boulevard-a comfortable, serviceable adommont



 I.. xpensive, serviceable plane, the flying of which can be



# DO YOU WAMT A NEW OR USED CAR? 

## We Have A Large Stock To Select From

Almost any Make desired-2 to 7 Seaters-Open and Closed Models
We Handle The Best Makes Only-All Cars Are Fully Guaranteed Also a number of Motor Trucks in various capacities ranging from $1 \frac{1}{2}$ to $3 \frac{1}{2}$ Tons

## Demonsteraidon on request

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opposed motor and has a speed range of from twenty-two to sieventy miles per hour.

An airplane flying boat of the type that now flies daily betwoen Havana and Koy West, will be exhibited ly the Acromarine Plane and Motor' Corporation. 'Ihis craft was recently landed on the ice at the Keyport, New Jersey, plant, domonstrating that with adaptations it can be mad. an all-weather boat evan in the cold comontria

The I'ons lalimy, at tiny, nom-rigid dirigible, will 1 :
 atwo-man (apacily ship diven by a lorty hotsepons mot or

 and a hablf feet.


 Company space. The planes were origimally dosigned us
 who drespmed the:m.






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Low Exchange Rate Makes Pricas Moderate and Easy.












## FORD CARBURETERS ARE OF TWO TYPES








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4．The Bund，Shanghai．

LIST OF THE AIR TRANSPORTATION COMPANIES OF THE WORLD．
｜las lay is only｜an la：
NにW VORK

Khars Aisship Transpertation Company
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Parmat dimath Compas！
LARIS＇，FRANCE


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AMSTERDAN，HOLLAND ：
Nederlauche Vligtingfabric．
BUENOS AlRES，S．A．：
bumbos lires Dirctaft compsam？

Mlentown and Niw lork Jiratup Compan！

California Great IVestern and Interstate Air Route．
11．1N11．1
Curtiss Company
HONしたONG
The Fiat Easiom IWiation（o）．
EUROPEAN AIRCRAFT BUILDING CORPORATIONS．

[^3]IF YOU WANT REAL BATTERY SERVICE SEND YOUR CAR TO US.


NEW BATTERY CHARGING ROOM-CAPACITY 58 BATTERIES

# THE CHINA GARACE Co. <br> 21 FOOCHOW ROAD. <br> SHANGHAI. <br> TEL. C. 2403. 

## Motor Invasion of Nanking. <br> (Crontinued from. paye 7)

One particular party of tourists in oms da! benl: 1.111 hire service bill of $\$ 210$, which would ssecm al ratho. redermat. return on the investenent in al light Ford toming an de phan
 gialton.

What the city of Nanking noods mos al the persmi time iss the development of several bran lammeting - 11 ... which would link up the interior of the city with the "1" execellent roadway which skirts it. Wilh \|his: acmoll|.I I. motor sairs would le: aven mome invilimes athl llae ime or At


 in Nomking to make tho (rit? allompion lo the l. 1 :W. 1





## GARGOYLE USED IN BENZOLE TESTS.

Mobiloil "B. B." Found to be Most Efficient in Experiments.
















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The Making of the Composite Car of America,
1/6al / . 111









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 l,ulb, type. A tail light and a dash light comprise the

 ilvile. onduit.



Concluding our confinement of attention to chassis


 confined to style and detail. Abandonment of the sharp
 from last year's. The attainment of individuality in this
 By that is meant, a car with sharp corners to its radiatur is very apt to have the same characteristics in the general lines ami sentome of 11 - laly. I round d maintur genaally carries its lines to the body where they are blended in pleas-



 shorton up the required space under the bonnet by briter ongine design, and adding these additional inches of syree in places where they mean so much more to the occupants.

 appropriate to use a good grade of synthetic material. The wearing qualities are very good, and climatic conditions,
 on it.

Inassibility, which should be a feature of every car, is a factor that notably aflects the Artage lar by its abeence,

## 1919 GOODRICH SALES HIT TOP MARK.

## Best Year Yet Reveals Sales Totaling \$141,343,419 and Net Profits of $\$ 17,304,813$.

Sales of the B. F. Goodrich Co., whose Far Eastern representatives are Furukawa and Company, for the year 1919 were the largest in the history of the organization. These aggregated, according to the company's yearly report, $\$ 141,343,419.45$, on which there were earned net profits amounting to $\$ 17,304,813.33$ after making the usual charges for maintenance, depreciation, bad debts and other items, but before making allowance for such Federal income and excoss profits taxes as may be finally detomined. The surplus after dividends for the year amounted to $\$ 12,657,813$ as against $\$ 11,452,114$ in 1918.
"Never before," states Precident B. G. Work in his statoment to the stockholders, "havo the products of the company given more uniformly satisfactory service. During the past year sales have been limited only by our ability to produce. When the additional manufacturing facilitics which are now in course of construction are brought into production during the coming year the annual business should exceed $\$ 200,000,000$."
and it has been found from a survey from the service man's angle of looking at American cars, that there are too many parts, small in cost, that require the expenditure of a goodly amount of money to replace, simply because the parts are in a place where in order to get at them, it is necessary to first get at a few other parts. One case in particular is brought to mind, and there are not many like this, where in order to remove the engine from the chassis one must first remove the body bolts, and disconnect the clutch, brake and the other pedals, and then slide the body back athoul (i) in. Then the engine must be jacked up. from underneath while the front hangars are loosened, and while still on thee support, a chain hoist is made fast, and the cogime slid back about 5 in . whon it will dear the front ongine supporting cross member of the frame.

A word in regatel to the mannfacturing methode of this
 fact that acemacy of machangen is a great deat mome emmmon now that has exar been the rase before in quantit? podme-

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 exactues, and tho result is that in man! fincory : How elaborato and rigid inspection metherds aro shill in limes.


Arrived Ex. S.S. "Elkhorn."

Sport MIodel Six " 55 ", Four Passenger

Limousine
Six " 55 " Seven Passenger

## Linwood Model

Six "39" Five Passunger.

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## Dong Chong Bicycle Co.



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SALES PRICES WORRY BRITISH DEALERS.
Shortage of Motor Cars Has Brought Excessive Profiteering.


















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 ahtan. . .aver 1he li-1 poine fail the levitimate dealer, that Q1. - of the puthe Hin! ine meme of the Mam: of makime an

 of tho car at a profit equal to that made by the juth



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 public and the "curbstone merchant," at the same time 1. ing well aware that those same cars will immediately be
 a chandy stranced priee over list.

 ('ar Soction of the MEtropolitan Division (London dealers). This group discloses a genuine attachment to the principle



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## INTRODUCING

## THE <br> NEW <br> 



## 1920 MODELS IN STOCK

Note that this 5 -passenger model has a 120 -inch wheelbase, and that in the new models there are embodied nearly 100 costly improvements.
ALSO JORDAN CARS IN S'TOCK


JOHNS-MANYILLE FIRE EXTINGUISHERS
Effective against Gasoline or Oil Fire Also fillers in stock.

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TIRES
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72,000,000 TIRES ARE NEEDED YEARLY.













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 like bamanas．

## A TRACING OF AIRCRAFT HISTORY．

Commodore Beament Prepares Chronology of Varicus Flights， Dates and Developments．

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1－1：3－Moratio Phillips constructed multiplane airplans．
 Wenlam．

 gine．Machine wrecked．
 oprated successfully



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1903-Wright brothers' machine, weighing 750 lbs . flew at speed of 30 to 35 miles per hour for a period of 12 seconds.
1903--Wright brothers flow for a distance of 24 miles in 38 minutes.
1906-Santos Dumont made the first officially recorded European flight, leaving the ground for a distance of 36 feet at the rate of 23 miles per hour. In another flight he remained in the air 21 seconds and flew a distance of 700 feet, winning prize offered by French Aero Club.
1907-Delagrange demonstrated a Voisin biplanc, and Henry Farman, an Englishman, flew a Voisin over 2,500 feet in 52.5 seconds in a straight line.
1908-Honry Farman made a complete circuit of about a mile in one and one-half minutes. Delagrange flew at Milan in a Voisin machine, covering a distance of $10 \frac{1}{2}$ miles in 16 minutes. Glenn H. Curtiss flew his "June Bug" at the rate of 39 miles an hour. Orville Wright made official flights at the C'anp of Auvours. Faman made first cross-country flight from Chalons to Rheims, a distance of 16 miles, in 20 minutes. Orville Wright made a flight of two hours and 19 minutes' duration, with passonger.
1909-Capt. Spolterini, an Italian officer, explored the Alps in neightourhood of Mount Blanc. Bleriot crossed the Channel from Calais to Dover in 37 minutes. Henry Farman broke the world's record for distance. Paulhan broke the world's recos for altitude, attaining a height of 970 feet.
1910-- Jauthan supassed I atham by climbing 4,16:3 feet. Sommer establishod in record in flight with the passengers. Labuteau set distance record for the year of 362 miles.
1911-C'urtiss successfully rose from the water. Nec'urdy flew from Key West to shore off Havana. Prier flew from $T$ wondon to Paris, 290 miles, without a siop.
1212--Powler flew across American continemt, a, 2:32 miles. (iarros set altitude for year of 18,1 sel ferl at Thmis.
1913- Trovost established speed recos of 123.5!) miles per hour. Pegoud made the first voluntary loop-1he-loop in a Bleriot moneplance.
1916--(butiss tri-plane fying boad made suceess:ful lrial flights in limgland.
1914-18-A avation develoged to its highest degren during the War.
 to Lisbon.

 minutus.

1920-First Aorial Berty aromal the IIomb hinha.



## YOUR NEW SPRING SUIT BY AIR EXPRESS




## PRODUCTION DROP IMAY BOOST PRICES.

Detroit Manufacturers Hit by Curtailment of Electer Power

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## U. S. AIRCRAFT MANUFACTURERS.

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 Jont:




Martin Aeroplane Factory, Dayton, Ohio.
 1 mk .
Nehnaska Aircraft Corporation, Iincoln, Neb.
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 their cars away that hundreds are being sent out without







## HOW TO CARE FOR YOUR CAR.

## Some Suggestions on Lubrication Given by Local Motor Dealer,

"The life of the engine of your motor car, and that of the car itself, depends upon lubrication," said Mr. H. S. Honigsberg, local dealer in the Chevrolet, the other day. "For this reason a few suggestions to motor car owners may not be amiss. If the following is heeded carefully the Chevrolet owner, at least, will always find his car ready to serve him the instant he wants it.
"The principle of lubrication is to prevent any two pieces of metal, that are working one againet the ouncr, from touching. This is accomplished by having a film of oil between these two metals. Upon this film depends the life of all the car's bearings, cylinders, pistons and rings. The owner should provide himself with a supply of petrol, cylinder oil, and cup grease.
"The oiling system used on Chevrolet cars is known as the constant level splash system. The oil is carried in a reservoir located at the bottom of the crank case and is drawn from the oil pan by a geared pump located on the end of the generator shaft, and is then fed into a basin having four troughs or depressions into which the spoons or splashers on the ends of the connecting rods dip. The rapid "splashing" of the spoons keeps the main bearings, connesting rods, piston pins and cylinder walls bathed in oil, whence it drains back into the reservoir to be used over again
"Never use steam engine oil or anything hot ar pure mineral oil in the engine. Fast running or touring over heavy and hilly roads uses up oil much faster than city drising. Put in an extra pint of oil every hundred miles or sor This precaution will avoid troable with worn bearings or cylinders. Once a month or every 1,000 milse, the oit in the crank case should be drainod off and a fresh shpply poured in. The old oil may be drainet by removing the drain phat on the bottom of the oil pan. Afier draining, Alush the camk case with kerosene through the breathor pipe, 1. plas : dsain plog and refill with clean oil. Bo sure that all the keromeno is drained off.
"Fresh oil is cheaper than repair bills, so olverve this point regularly.
"Use light cylinder oil to latainets the rocket arme am push-rod felts. Keep the felts saturated wibl wil. Wil the fan overy time you do tho rocker anm:

## U. S. TIRE OUTPUT NOW 45,600,000.

Statisticn show the prak demand los lire: in lin. (10nt. 1








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Kıryptoks ground according to prescription. Rranches:



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Head Olfice:-P352 Nanking Road, Shanghai. Telephone C. 3895.


## Every issue of THE ORIENTAL MOTOR contains a Buyer's Index to advertised goods. This is for your convenience. <br> See Page 68.

CHICAGO SHOW SELLS 2,000 AIRPLANES.

Recent Exhibit Proves Sky Craft Becoming Popular for Business and Pleasure.










 although the exhibits covered a wille range, the formbur




 six-cylinder engine and the other a twelve-cylinder J-w...










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 dillerent machines.


 deal more than formerly, the handle which was the principal





 and future of the industry as was evident at the motor vohicle daplays al (meni! !eats afol.
"Dear, What a jolly little place this Bund is! Where do you want to stop?"
"The first place where you can get a box of the BEAUTY CIGARETTES', Darling. I am just out and can't go any further without a BEAUTY CIGARETTE any more than the Motor-cycle can go without gasoline."

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AND ALL LEADING TOBACCONISTS.
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## NASH HAS SUCCESSFUL YEAR.

## Export Trade Increases with Rising Production Figures.

In a your which has presented problems of a somewion trying nature to many plants in Un industry, the Nash Motors Co., U. S. A.-who are represented in China by the Wah ('hang Trading ('orp, -which proferses itwoll we coption to the rule, still increased its production, increased its profits, insured its own source of closed body supply, and mado sapid shides toward a duplication of its phant. 'Themen fow but highly impertant fents fomed the high spt, ief the company's anmal report. Toons sakes for the year con ling Novomber 30,1919 , were $\$ 41,754,093$, slightly bettor thran

These smilaritice may indicate that the Im xican aircrait, industry will develop and (xpend rapilly dming the
































## BERLIN TURNS TO MINIATURE MOTORS FOR GAMBLING



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# BRITISH MOTOR-CYCLE DEMAND INCREASES. 

Side-car Combination Gaining in Popularity-Expert Suggests Changes.






 minimum phopertion of 60 as agerinst to pa: cent.




 $1-\ln ^{-1}$ ad holiday purposes as an antomoribe














# GOODYEAR EQUIPPED CYCLE BREAKS RECORD. 

Artley Cuts Down California Test Time by T'en Minutes.


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 high gear record by 42 minutos. Four hundred and sixty: In. m:





 or side-car machine, which he claimed could be sold in the United Kingelom in tens of thousands and produced at an
 "vlinder "aluminium" engine, preferably water cooled, with overliend valves, completely inclosed transmission, four-- +l l gear box and clutch, efficicntly sprung frame with quick detachable disk wheels, complete electric equipment of dynamo, batteries, lamps and horn, really effective mud

 groperly incorporated in the desien.

## You Need A Motopcycle!

How long does it take you to get to office in the morning? How much of the tiffin hour do you waste going and coming ? How much a month do you spend on hired motorcars?


Get in touch with
Central Garage Service Station 27 Weihaiwei Road, or
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53 Szechuen Road, Shanghai.
and arrange for a demonstration of
"The Military Excelsior"
Series Nineieen

Illustration shows Model 19-E with MIDCO Electric System, including Magneto Generator, Electric Head a Rear Lamps and Elecetric Horn.

HE KNEW IT WAS A TANK FOR SOMETHING.

Prior to the holidays a wal-known Pahiatual, New Zeatand resident became possesecd of a motor cal. Ite learned to drive it, and contemplated a tour during the Christmas vacation. On Boxing Tan, howerer, the cal refued to move, and no cfforts on its new own res part had any cffect. Next moming he got in touch with it merhanice per phone, and received the suggestion that pexhaps the car needed lenzine with rolisf. Howerer, the sar still rallowl to go. The me hanke fosoned up agan a eompdo of days later
 homght, the benzine tank wats empt! I f.w inguit ise then eliciter the fact that the new owner hated peancel lio I w\%isu inte the radiator!-N(w Yeland Motor and ('ick: Jommal.

## The Motorcycle Section Containing Local and Foreign Notes is Now a Permanent Feature of The Oriental Motor.

CYCLE CLUB WORKING ON RACES.

Negotiating With International Recreation Club for Use of Track.





















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DU PONT HOLD ON G. M. C. PROBABLY STRENGTHENED.



 .1 14011 .

[^5]THE RACER IN THE ACT OF HILL CLIMBING.


A pantion if a teal maion Consmes H111, near Florence,
 Alere, antmatouf, findici tirst in a Grand Pris Fiat.

NEW YORK TRUCKS MAY WEAR COW-CATCHERS.

City Considering Ordinance to Regulate Truck Equipment.






Of course, there will be serious opposition from the


















 full eperifimations, Hucpuints, drawing, photographs, ete.



 a. at 111

 S1.111

## HARLEY DAVIDSON SETS NEW RECORDS.

## Twenty.Three World Records Clipped off in Five Days.

Twenty-three world's motorcycle records were broken at Daytona Beach, Florida, over a surveyed and certified course and timed by the famous Warner electrical timing instrument, which as the property of the American Automobile Association and which has been used to time all important world's automobile records for several years. This instrument has been tested by the U. S. Bureau of Standards at Washington and the Pacific Coast U. S. Naval Time Station. In all of the Florida time trials the timing was done under the direct observation of the Motorcycle and Automobile Tcuring Association referee, R. A. Leavell, who had charge of practically all important records made by the Automobile Association during the past few years. The tests took place on February 13, 15, 16, 17 and 20.

Here is a list of the records:
A pocket valve Harley, Fred Ludlow driving, 1 kilometer in 21.75 seconds, a rate of 102.87 miles an hour. Previous record, Australia, 1917, made with 8 valve machine with auxiliary exhaust ports.
An 8 valve Harley, Leeslie Parkhurst driving, 1 kilometer in 21.64 seconds, rate 103.39 miles per hour, breaking record of Ludlow, 1 miles 34.89 seconds, rate 103.18 miles per hour. 2 miles 1 min . 12.65 seconds, rate 99.10 m. p, h. 5 iniles 3 min. 2.32 seconds, rate $98.73 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.

An 8 valve Harley, professional unrestricted class, 1 kilometer, 19.98 seconds, rate $111.98 \mathrm{~m} . \mathrm{p} . \mathrm{h}$., Leslio Parkhurst riding. 1 mile, 32.45 sec., rate 110.94 m.p.h. 2 miles 1 min. 05.82 sec , rate $109.39 \mathrm{~m} . \mathrm{p} . \mathrm{h} ., 5$ miles, 2 min .46 .88 sec., rate 107.86 m. p. h.
A 4 valve single cylinder Harley, Fred Ludlow riding, new professional record 30.50 cu . in. class, 5 miles 3 minutes, 56 seconds, rate $76.27 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.
Professional side car records, 8 valve Harley, "Bullet" side car. Leslic Parkhurst driving, 1 kilometer, 26 隹 11 see. rato $84.30 \mathrm{~m} . \mathrm{p} . \mathrm{h} ., 1$ mile, 42.8 L sece, mate st.0.9 m. p. h., 2 miles. 1 min 25.69, rate s 1.02 m . p. h., 5 miles, 3 min .34 .52 seconds, rate $83.91 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.
An 8 valve Harley, Lestio Parkhurst riding, (61. ( All. in., class, 1 kilometer, professional, 21.56 sice, 103. it m. 1. h., 2 miles, 1 min. 11.19 sec., 1000.73 m . 1. h.,





## HARLFY-DAVIDSON SETS 1920 PRODUCTION FIGURE



 side-cats in 1919.

## Cleveland light weight


$2 \frac{1}{2}$ H. P. 2-Stroke Motor-Kick Starter
Straight line Worm Drive-Weight 160 lbs.
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The fust bun of the Motorende (lut ar shemehai will


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[^6]
## CADILLAC TO HAVE MODERN FACTORY.

Latest Eingineering Ideas in Construction. Machinery and Equipment Introduced in New Plant Now in Course of Erection in Detroit.

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The new enturged phent of the C'alllace, Detroit, C'.S.At








 dealgani that two additional stories can lie added at any time.












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 up generally in this building, winch will also contain the enameling equipment for cnameling fenders, hoods, radiator covers and dozens of other motal $\Gamma$ arts.

The space cecupied by the final painting and enameling
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The same an tut con- id min whiin has lar-n pais to


 iently, safely and in the minimum time.

## Closed Car Car May be Ultimate Type

 (Continued from Page 38)Considering as either standard, or likely to become standard, that which appeals to the greatest number because of maximum use to the greatest number, it follows that the self-driven types will ultimately prevail over all others, since the average automobile owner cannot afford to maintain a chauffeur, and that the type most appealing will be the cars having standing tops. It is not at all unlikely that these may turn out in time to be intermediate between the present touring car-with standing top and the sedanbeing more luxurious than the former, but for economy and practicability less so than the latter, being better protected than the former, but less heavily constructed than the latter. This implies two full-length seats, forming virtually two compartments in the body, and the four doors. There must be doors on both sides if the practical man is to enter or leave his car from eiher side, as it stands in front of his own door, regardless of whether it be heading toward or away from the garage. This car of the future probably will have some resemblance to the closed cars of the present day, but will have a better proportioned superstructure, so that it will look less cumbersome. Already there are indications pointing toward reforms in construction and the employment of lighter materials, that will tend to render the ultimate type of popular car a good deal lighter than the closed cars of prosent use.

Before jumping at conclusions respecting the universal car of the future, it must be understood that its advent must necessarily involve some compromise on the part of the designer, and some sacrifice of finish and equipment on the part of the consumer. For example, the finishes and fittings prevalent on the medium-priced grades of touring car, must find their counterpart on the popular closed car. Individual seats must be displaced by built-in cross seats, probably in one of the three seating arrangements both for simplicity, and also for strength, since the built-in cross seat becomes essentially a strengthening nember of the body, as well as a load carrier. There must also be in all probability some sacrifice of tonnean space in tour-patisenger cars, which now is ordinarily wasted. By mo-doing, however, the designer will bo adble to produce at close-coupled body of exceedingly light weight, low lines and low cont. 'Ihow, naturally, we the things for which low will am.

The storage building for fimshed cars and sumber








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Positively prements ('arton fommation. 'The prome chme for mere
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## REVIVAL OF GLIDIEN TOURS

With the mailing of entry blanks for a National Reliability Tour to be held during September and to run from Coast to Coast plans for a resumption of the Glidden tour are getting surely under way. The tour, which is to be run under sanction of the American Automobile Assn. is to start at New York city and finish at San Francisco. There will be 22 days of actual running, with three additional days, Sundays, to spend at controls. Richard Kennerdell is chairman of the committee in charge, which also comprises S. A. Miles, Alfred Reeves, Robert Wolfers, W. E. Metzger, Emlen S. Hare and C. G. Siosabaugh.

Entries may be made by manufacturers of stock cars only, as that term is interpreted under A. A. A. racing rules. Two cars of four or more seating capacity may be entered, but the performance of each car in an entry will be observed and credited separately. Entry fees are fixed at $\$ 1,000$ per entry of two cars provided that the entry is made before March 15. After that date and before June 1, which is closing date for entries, the fee is $\$ 1,500$. It is said that a promising number of manufacturers already bave signified their intentions of putting cars in the run.Automobile Topics.

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7. UNREMITTING EXPERT SUPERVISION
8. CLOSE DEPARTMENTAL CO-ORDINATION
9. WHOLEHEARTED STAFF COOPERATION
10. RESULT: WORLD-WIDE REPUTATION

SUM TOTAL: SATISFACTION TO USERS 100

## DUNLOP

Rubber Company, Limited


?2!. 20 hinhian, Rust, Shanghai. "Pneumatic"




TRADE MARK

# TH上 ORIENTAL MOTOR 

A Monthly Magazine devotele to Motor Interests in China anje the Fiaf Eist Geneliale.

## VoL. II.

SHANGHAI, MAY, 1920.
No. 2.

## THEY JUST "DROPPED IN" FROM ROME

First Plane of Italian Squadron Enroute to Tokio Arrives Shanghai.



A
























[^8]

Lient. Ferretrin rlimlizing cut on his arrival in. Shanghai. Mot Cappannini, the 19 years old merchanician. Who also made the flight, is shown
gettin!s out on the left.
and then swocged down to ling the plane to a rest at the north end of the field. So smoothly did the airmen arrive that it scemod almost imporsible that this sucy and stuttering little man-mado bird had actually flown over a part of Europe, spanned the southern expanse of Asia and followel Th, the coast of China to Shanghai.

It did not take long, however, for the welcoming international assembly to rush to the two air route pioneers and extend them a welcome, which was the beginning of the most hatliant round of receptions and ovations that the bird men had received on their journey. A tea was given

Lieut. Ferrarin made the journby from Foxhow, lis last stop before arriving in Shanghai, in five homs, following the const from that city to Hangehorr, flying over the bay there, and coming directly to Shanghai. According in Cappannini, the mechanician, the journoy was made carefully and easily because the coast offered no "soft spots" to light on.

The flight hat its logimning on Febrany 24 in Rome. arcording to Lieutement Farmin, after he and his mechanician had been given a scant fortweight homs notice that they were to take the air in the direction of Awia.
N. T. Yong.an7 S. K. Chen. Secretaries, Burean of Foreign Affairs; City Mag., Shen Pao Chang, Commander S. T. Wong, Colonel Sung Chi Ching, Engr. Lt.. Fik E'n Hoina part of the official Chinese reception committre f shanghai, Kiangse Province and the Central government.




Acconymang Ticutenant Ferarin was his companion
 cloady on the fonmer ubtil an aceident in ('anton mode
 Shanghi in beet in chere to deten a relief phane and stat



 harees of elas is:umey





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Fin li:m in $11 / 11$ meshlatis
















 Live 1ton. Whate the denmen 1 int iss
 III Gum commally ont dlay a mils
 Fermain gave his veudeville audience of




Thi hathe at comean omme b the









 and started their five houre tight to shanglazi.






 Ahain-: Gencral ilu Feng-lin, acting


Prescntation of a flaral "rrathe an the ni.l.t. -i close "p, cirie if Lunt. Ferrarin, Mechanician Cappannini and a portion of the Shanghai reception I (1..n miltı.

Commissions of Defonse; Jation Hew, representine the Air Ministry of the Temphlic of ('hime M. Bentivoglio, ".eretay of the Tlatian ('humbin of Commerce; $T$. Toledamo, one of the movi prominent members oi the Italian commonity of shanmlai ; E. S. Cunningham, Laited States Consul (ichum; Thoxie I.
 Bockex, ecerctary of the Aere ('lum of Shanelpi: Mrime Hilton Johnson, and Flag Commander S. T'. Wong.


Thes. 1: . 1. "1 mosl.












Shengha, flying low in meny instames and giving the city (he of the phetiost and most shillful thight- it hat ever


 onlcolvers. 'The shas:s were filled with (binces and































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Continu:d on Page 44

thoos ruestr
4042-116



## GASOLINE OCCUPIES THE SPOTLIGHT.

Motor Publications From Various Parts of the World Recording Kicks.

Gambine has come to oewpes the parmount pasition in the minds of the motorist: of the menjouty of the comitrics of the world if the motar publications of thene setwal (a, man. tries may be taken as at frometer of the mon cox owning public. It would som, aceording (a) olficial :amouncemen):

 ratus pats of the worl, paticulaty in the Lnich states, that the price pre gellon cominuss to rise and that beemes wh the conomons incresto in the worl's mot in proultim
 thus created.
l'rolably some of the motorists of Chima whe feel that they are leing subjected to unfair pions for fim 1 b, wane of a control of the ficld by the lang producing compmian, will find some solace in the fact that their fellew motor cor apmo tors in other combties are heving the sume experioness.

The "Anstratian Netorist" expleins the absence of any comment on the continued rise of the price ef ersoline ir that country by the following :-

One band of petrol during the month rane $1 /-$ per gallon, but up to the momem of witing other hands have
 anticipated at any moment.

This is bad news. 'This jommat has inverstighed pelfor pices, and we know that commont has heon made omenning the absence of an attitek on the oil compmins in (unt pages. The reason that the "Australian Mononif" has mot ‘attacked' the oil companion is leallice they anc 11,1 !



 in Australia for inceasing putes for the ramon then it is
 fitl in line.
 that the focel menamers of the bititioh lap bial wit


 'I'anmats the ('amadian pria.

























 mitter was erroneous in that it clatmed the: the. 1 mef methe:






















 -. 11 .......1.


 (Continued on Page 92.)

# BELGIUM IS BEATING BACK． 

Mowr Car Manutacturers Begin Deliveries for this Year．

D








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 いい1 liol．


























In early 19919，when the Belwian motor can factories at－
 hammar on file．They provered the necesseary articles with
















 ｜： 1 －














The first step was to get back the machinery which has

 the dmastice，recognised their own machinery，and had it




 ments，the latter modertakis to supply to Belgium all the






 wher five sears，if desired，thas relieving the purchasers of immerdiate concorn regarding the rate of exchange．





#### Abstract

To meet the demand for transportation for touring the battlefields of France and AlsaceLorraine, motor buses capable of carrying 14 passengers are being brought into service. Maps of the routes covered are carried on the rear of the bus. Other lighter cars are also being pressed into use.


the construction of cars. The Minerva Co. at Antwerp, which is the biggest car firm in Belgium, has 2,000 men at work and has already begun delivery of the new post-war four-cylinder model with Knight engine, and hopes to have the six-cylinder type ready for delivery within a couple of months.

The Métallurgique Co., produced aboui 200 cars last year, these being the pre-war type built up of such parts as remained in stock when the German Army retreated. These works were employed by the Germany Army motor transport conjs as a repair depot, and, althongh all the machinery was removed, the stocks of spares were left behind, for they were required for Métallurgique cars in German service. During the present yoar this firm expects to produce soo cars.

The chief engineer of the Excelsior Company remained behind during the German occupation, and being unable to produce; spent his time working on new designs. For four years he had no connection with the outside world except an occasional American technical paper smuggled in through Hodlamed. It wats thus with paticular imerest fhat he reampal the: European prost-war dowigne wilh these he had pepated when partically a prisonce in his ewor works.

In order to save time, the first Excedsion cars, now beeng built, are similar in all essentials to those of 1914 . The mew model, howeverf, embodies very mamy intoresting leathes. The engine will be a six-evtinder with overhend values and an overhead camshaft. Instead of at detachabla head, use is made of an :abminimm deatachable water janeket and hoad, this being memeded on sted cylinder barrels. This is a patented feature which gives the advantane of the detachathle head without any gossibility of wate leakatere into the "ylinder, and whilet providing : momblow ronsthetion makes it pessable to change ath individual eglamhey tamed if ano should be seoped, of to chamer them all if malised


adopted brakes on all four wheels, and has aholished the brake on the rear of the gear box. Although there is onl! one pedal, these brakes operate diagonally, the effort being equally distributed between a front wheel on one side and a rear wheel on the opposite side. Cantilever springs have been adopted also, in conjunction with a special stabilising device consisting of a piroting parallelogran uniting the center of the axle bousing to the frame members. While cantilever suspension is excellent for all ordinary speeds, dis advantages are sometimes felt at very high speeds, and partjculary when comering. (On these occasions the rear ent has often a very pronounced tendency to swing ontwards.

With the Excelsior device, the rear tracks perfectly, as was shown in a series of teste carried out in Belgimm. The car was driven at the highest pessible speed \&n : very winding rowd, when the rear wheels tracked with the fiont in a most :cmarkable mamer, and all semsation of l.eing thrown sideways was absent. With this device, and trabes on all four wheels, it was passible, mwely for demonstation purposes, to perform "stunts" which would have been suicidal on many abs. When ruming down hill at fonty mikes an hour the brakes were applated when ten gats thom a right angle turn, and the turn was made withomt the least trace of skidding of the rear whede heing vi-uthe on the road.

Amother feratue of the new bxedsion cats is the plating (1) the seer box at the forwated end of the popellemeshat homsing, with eomection to a substantial cens frame men:-

 peller-shaft, and gear ber the somond.





(Continued on Page 48.)

# SHANGHAI AERO CLUB IS EXPANDING. 

Reception to Lalian Fliers Surt of Proposed Program






 whiat ion on I lew










 Hying tield will be established in shanghai in the "

 16. that rogular aro mail service could be expected betwern Peking, 'Triman, Nanking, and Shanghai before the end of
 IEA that astation is th plat in the devalopment of (lime Those of us who have seen the Chinewe Aly know how art
 predict a great future for ariation in China with Chiness
 country without special permission, but we are hoping that G10 Chanc. (mam:



facilities the Olab now has or may have tor the dewhopment
 toward this development if the ixperpemed ivemblears
 form and give the re-alt of their experte.lere to metmbationwhich secure licenses for flying.


 will be flying over shanghai and the people of this community will have the opportunity to see first hand all of the stunts and tricks which were developed within the flyin:
























 committee is making plans to care for this expansion.


 1:- and effective organizations in shanghai. Commercial asvation is only in its infancy in world affairs, but we pro-




 Any one of the following men who constitute the executive cormmittee of the Aero Club of Shanghai will be glad to

 your particular inter -

Mr. Brodie A. Clarke, l'res., Mr. Y. C. Tong and T. E.


 1! -

## FLYERS ARE ROYALLY ENTERTAINED.

## Shanghai Reception Largest of Rome to Tokio Flight.


 Ferrarin eighth from left, Y. C. Tong, Vice-president of the Acro Club, on left of Ferrarin.

THE TARGEST of the ovations which hate heen received loy Lieut. Aeturo Forrarin, dus mechazicians, Mot Cappannini, and Lieutenant Masioro, Italian aviators en route from kome to 'Tokio, came with the arival of Lieutenant Ferrain upon his arvival in Shanghai on Sunday, May 2 , and the week leading (u) to his departure from this city on Sumday, May 9. The first reception was that of the Intemational Recreation (lnh hed upon the arrival of the fliers, which was followed ley a romul of dinners, receptions and teas. It a tea at hae Itadian Consulate, the suceessful aviator was preented a gold medal by the Italian community of the city.

Thee two largest and most brillant affairs W:ッ: Hue
 Touse Hotel on the night of Nay 1 , and by the (hime offeciats of Prking and shamghat at the lime all wh Fomeron Affairs on May 6






 the government of the Repmhtic af' ('hima alml at m.anl: "



























# The Oriental Motor 

Motoring Motor Cycling-Aviation<br>A Wonthly Publication Devoted to Motor Interests in China amb the Firl liat (iollonlll<br><br><br>London Representative-Mr. C. Cokayne-Naylor, 3o-7-8 Southampton St., Strand, W.C.<br>Subscription Rates: Mexican $\$ 3.00$ for Six Months or Mexican $\$ 5.00$ for One Year in China, Japan and The Far East; America, G. $\$ 5.00$ Yearly; Great Britain and Europe, £1; payable in advance. Single Copies, Mexican $\$ 0.50$ each<br>Advertising Rates on application.

## NOTICE TO CONTRIBUTORS.

The Editor will be pleased at all times to receive photographs, sketches or articles of character likely to be of interest to readers of this publication. It is understood that contributions will not be paid for unless remuneration has been stipulated and arranged for in advance.

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Vol. II.
SHANGHAM, MAY 1920 .
No. 2.

## EDITORIAL.



 ampled advancements and unrivalled achievements in the World of situce. In no other smitar priod in the his 川 of the world has there been evolved such inventions and dis-


 and -pertatular develophents as in the wemen of the naviga-


The sear of 1919 brought the attempted crossing of the Atlantic Ocean by the intrepid Australian, Hawker, and






With the opening of the year of 1920 came the Transcontinental thight of the American army across the United

 !ㄷ.. - - mu! !







 serve by reason of their achievement.


 1. Anme will occupy the same historical prominence that is now given Colnmbus, Lewis, Clark, Livingston, Peary and







It in time Hh:t contimmed use of the rontes followed

 1\%. We of alswalt fir the wom de: meds of tha nations. The air currents should be studied and charted,
 of the best and latest type should be provided by the several ? $\quad$ orermments of the world.

China can utilize aviation to a most profitable degree because of the vastness of the nation and because of her lack of adlequate transportation. If the plans announced by the present department of aviation of the Chinese Republic are
 womlds air powtrs.

There remathe now only the ros. aner of the l'acifice to batk: the encireling of the wotd ly air emm! l, and rumors f:ont the Inited stater would indicatw that ith- :(x) m mar be attempted. The 'round the world air derby of the Aero C'lub of America now looms up as a practicable possibility
 1,inut. Fomarin.

## HISING PRICES

Prolahly mother induary in the word late experienes 3 stull a rapad and atombishing wowth at ham the mamufacturing and marketing of automobiles and as a result the in-
 Are heing rethered in all phrte of the thade and which, from fresint indication-will continue to le firlt until the market $r: 3 \cdot l u s$ a slight degree of saturation. And present develop. mum- in att patt- of the world would indieate that the 1) wte of -atutation will mos be reathed ios this ceentury
or in several centuries to come. One of the most striking developments which presents itself in this regard is that of motoring in China.

It requires but a scant amount of imagination to pictuce the market that China will offer whon she obtains a. system of national highways and when an increased standard of production and living among her $400,000,000$ pieoples brings her up to the desires of the Western world. If production is short of demand now what will it be then?

But to return to present day affairs in the motoring world. Prices are rising-rising in every department of the motor industry and its correlated activities.

Elsewhere in this issue of "The Oriental Motor" will be found articles dealing with the universal rise in the price of gasoline, the rise in the United States of motor parts, the reflected rise in the prices of motor cars. In the last isslue of this publication was noted a rise in the prise of tires and a threatened shortage of the supply of crudie rubber. This rise in every case resolves itself into the finai explanation that the demand of the world is greater than the supply.

Take for an example the demand for motor tires. Iu the United States several years ago the tire manufacturing field was confined to the larger pioneer companies who hat been making rubber products for years. At the prlesent day, every city has its small tire manufacturing plants and with this there is enough of a demand to give all of thoes a shortage of production. Small companies which three yeare ago had a capitalization of several thousands of dollars now have ones of millions.

In the parts field, despite the fact that innumerable tool and other foundries have addod to their tines of mam: facturing that of automobile parts, there isn't a sufficient supply to go around.

The finished car field has been invaded with the coming of the present year by no less than one hundred makers or assemblers of motor cars. Yet this makes no impression on the incereasing demand.

Nor is this confined to the United shates, the mambfacturers of Great Inritain camot produce last emongh 1 , supply their immediate comtries and have furned an (ond shoulder to exports. The same is true of the binempen manufacturese.

Deliverios: all over the word have beedome a mather is the early bird and prospective buyers ofthen find that then
 earliest during the lather pate of tome
 there are certain embthations that comberl the price. Wh.


 ment of commercial :atiation in the oftine


with the fundamental economic principle of supply and da mand and the solution must cope with the increasing demand. Even prohibitive prices and the resultant lessening of the demand would only bring the prices lower to a point where the impetus of the new demand created would boost them up again.

It would seem then that increased production is the only solution and from present day prospects the increase that would be necessary would be staggering in its enormity. The reliet of the motor owner is only keen harquining. economy, the use of one motor car more than a season or so, early buying and keeping a close watch on his cars per. formance and maintenance.

## THE NATIVE STREETS OF SHANGHAI.

It would seem that the native city of Shanghai after having been associated with the foreign settlements of the city would have assimilated some of the progressiveness of the West, particularly in the matter of streets.

Close association, however, seems to have brought forth no fruit and the mative streets of Shaughai are in the same condition as the streets of small villages far inland in the nation. It may be that the money appropriated, if money hes boen rist aside for this purpose, has been expended ia the luxurjes of motor carts to be used on the streects of the French and Intermational settlements or in the various cther sources of expenditure which ate most prevalent in the olficial life of thina.

The fact remains, howerer, that the streets ate narmew fathy, full of but and mot deaterng of the diatimetion ab being called streets.
commercially the construction of good roads would gied dividends 10 the merehante outside of the foretern
 and forequers who will not gor mear the native seethens of the city unless foreed to becallse of tis strevets and the ir condifion. It is time the mative olficials were taking up this matter and appling a memedy

## RACES, CONTESTS AND TOURS.



Commission.

## MEETINGS.


1••••••••

## FOREIGN SHOWS.



## BENZOLE RESULTS ANNOUNCED.

## R. A. C. Trial Reports Show Fuel is Suitable

The report of the Britich Royal Automolile ('luh 10,000 mile benzole test, conducted on a 191 丂丂 $40-50 \mathrm{~h} . \mathrm{p}$. Rolls-Royce standard open touring car, over the six standard trial routes of the ('lub), has just been issuled. One of these routes was used each de?, cach route thus being covered ten times in the trial. The total mileage covered was $10,007.25$ miles, and as the car retmed onch night to Pall Mall a proportion of each day's run was through London traffic. The test was conducted on National Benzole, enltered by the National Benzole Co., Ltd., of 30, Grosvenor Gardens, Liondon, S.W. 1.

Record of the Trial.-The carburetor was water heated, haring two jete (controlled fiom the st wing wheel) and an automatic air valve. The carburetor was standard except that it was adjusted (the dosign was unaltered) for using benzole. In order that the effect of the fuel upon the engine might be observed, the latter was dismantled prior to the trial and the general condition recorded. Cylinders, pistons, valve chambers, valves, etc., were thoroughly cleaned before the engine was reassembled for the trial. The weight of the car, unladen, but ready for the road was $5,070 \mathrm{lb}$. (i.e., 2.3 tons). The average running weight of the car per day, incluaing load, throughout the trial was $5,387.7 \mathrm{lb}$. (i.e., 2.4 ton(s). The car was driven throughout by the same driver, who was not an emplore of the entrants. The car did not "coast" down hill, i.e., the clutch and gear were not disengaged.

Road Conditions.-During the whole trial they were

 times at litile show fell on el flors. With the excoption that enljustmenis mote mont: the the cubueton ome the Bre and 8th days, and that the throttle and air valve were clemal before the start on six days, no adjustment or work was done


 with fresh oil four times during the trial, the oil consumption being 935.25 miles per gallon.

Amount of Benzole.-During the trial 561.5 gallons were used, giving a consumption for the whole distance of 17.82 miles per gallon, equivalent to ans average consumption of 42.87 ton-miles per gallon.

Average speed.--The trial was run at an average speed of 19.9 miles per hour (running time only). During the period between the carburetor adjustments on the third and eighth days, the engine missed at times, due to the fact that the supply of benzole was reduced to the slow-running jet at the first adjustment. This misfining ceased when the original adjustment was restored on the eighth day. At no time was there any emission of smoke. The engine did not start
easily from cold, but was not unduly hard to start. When warm, the engine started easily.

Condition after the Trial.-The engine was dismantled after the trial in order that its condition might be compared with the condition prior to the start of the trial. The exterior of the engine was moderately clean, there having been only a small amount of lubricating oil leakage (not enough to affect the consideration of lubricating oil consumption!. The general condition of the engine as regards deposit was what would be considered good, after running 10,000 miles, whether the fuel had been benzole or petrol. The deposit on the piston heads was uneven', being slight over the major portion of the head, but somewhat heavier on the side remote from the valves. The stems of the ralves all of which had leen seating properly, were in good condition, were a good fit in the suides, and showed no measureable wear during the trial. The valve facings and seatings were in very good condition, considered in relation to the mileage. The cylinders and lid. nis were all in excellent condition, and measurements showed that no measurable wear had occurred during the trial. The rings were in good condition, but on two pistons the top rings were not properly free in their grooves, owing to lard deposit. The plugs, which were neither cleaned nor changed during the trial, were in excellent condition. A chemical invesigation of the chasacteristics of the lubricating oil before use and after $1,050.5$ miles' use showed that the cil contained no trace of benzole after use.

## 30,000 LETTERS AN AIRPLANE LOAD.

## U. S. De Haviland 4 Breaks all Previous Records.

All load-caurring airplane records were broken recently dilen af twin metur I) Havitan! ! dame dwised by and manufactured for the United States Post Office Department covered the distance between the air mail field at Washingtrand anda at Belmont Pali. X'zW York, a cistance of 218 mites, in 1 hom $3 t$ minutos. With a mail load of neady 30,000 letters weighing 630 pounds. The speed was at the rate of 138 miles an hour. The best previous record was on September 19, when a single motor De Haviland carried "an potinde of mail fimu Warlimgton io New Lork at a speed of 123 miles per hour.

The twin-motor DeHaviland plane is perhaps the only twin-motored plane built in the United States which not only maintains the alsitude under full load with one engine, lan actually climbs on one engine. In the epinion of the protal authorities it is the greatect forward step made in the divilopment of a small meight-carring plane It eliminates the fire hazard by having the engines in the wings and away from the gasoline supplies and also it minimizes danger to the pilot for the same reason.

# TRuCKING EXCLUSIVELY 

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## THE CHINA GARAGE Co. <br> 21 FOOCHOW ROAD. SHANGHAI.

## TO COMPLETE DIXIE HIGHWAY BEFORE 1921.

## China May Learn Goas Roads Lesson from American Improvements













 Dixie Highway


Refore the close of the year a through travelable highway from Michigan to Florida will be completed if the high hopes and expectations of the ofticials of the Jixie Highway







'This highway is madr up in general of two parallel



 throngh I)etroit, Tolecto, I)ayton, ('incinnati, Knoxville,




 inull.usill.
 not culs low commercial pmoses but by tourists from the Middie West on their winter pilgrimages to Florida. Being located in parallel routes, tourists may go one way and refurn another.

It extends through important manufacturing centers and fertile agricultural sections and the Appalachian Moun-



 Ch11:-ッ 11.410 n



 was passed

That, as part of the internal transportation facilitic - of each of the countries, there be developed a system of high. ways suitable for motor truck use and other vehicular traffic, giving access to the territory that cannot be economically.




## SUNBEAM WILL ENTER INDIANAPOLIS SWEEPS.


 sweepstakes to be run st Indianapolis, May 31. will bo made
 States and noted racing driver, whose departure for England is scheduled. Last rear the Sunbeam entries were foun 1 ineligible to compete owing to the engines boing built over-- is throneh a twhimical aron.

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

# UNION'S 

COMPREHENSIVE
MOTOR CAR POLICY
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ACCIDENTAL DAMAGE

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(Incorporated in Hongkong)<br>Establishel 1835.<br>Policies are issued at the Society's<br>HEAD OFFICE, Queen's Buildings, Hongkong.<br>And also at the following Branch Officis in (hint:<br>SHANGHAI, Union Building, No. 4, The Bund.<br>HANKOW, Union Buildings, Tungting Road.<br>TIENTSIN, No. 6 Victoria Road.

# TRUCKS IN MANCHURIA. 

Possibilities of Wide Market Seen by "Mack" Man.












Thowe are: very lew roads in Manchuria worthy of the mame, nentahly the mand trom (hargehmen to 1-TungThew, a withe wer thirty miles and in good shape for hears traftee (ioing betweon any iwo cities one encounters all c.rrts of roads, plowed fields included.

- I had octasion rewenty to matic a demenstration fun fom 'hansthun of Nunganhsien, which is shme fifty mikes away. Thas trop was made with a $3 \frac{1}{2}$ ton Mack truek, prosbaing the first large trock to amoe in Manchmria. The road was low fuct a tew males ont and most of the going was iow seat worl wht an oceatomal hard stetch where the mascmum cencomed apead could be whtamed. Most of the small rivers had to be forded and the few native bridges did
 load.
 act on a destroyed bridge that was holding up several carts.
 beams were in place and almost the right distance apart so


It the present tome eros-combers work in Manchuria calls for the lewt that is in a twek bout with cheop labor and

 :onuter pac.able.


 nection with trucks. The impression that a truck can pull
 is bats


 the horsepower phenomena without going too deep for the






While thes mat ton strike the fume trote at the


 immecentls askent if that were indluded in the set of torks. !1e thought it might cone in tames.

* Bodies (ame sem and this particular impuirs wan for 1.11s handies. Ite had aimmet derided on a bods equal to at Pullman car so that passengers could sleep when the bus was not crowded. I expected a smoking room to be sugreeded bext but mo, patmting was the thext subject for dis--u-sion. He thought the same molers an his sitetmath would be predly. Is I had never seen the sidetmand I did now. "ax mombuatic. Iater 1 fombl that it was hirds eye mapla. It hat it was mally devided of adopt a color that the police would appowe.
- Because of the vast quantities of material to be moved, Manchuria will undoubtedly become a good motor truck market. There are several trucks now in each of the larger (Ities Dairen, Mukden', Changchun and Harbin, the successful operation of which will largely determine the rapidity whe which motor manaports will supplant the ohth methods."


## U. S. MARERS INVADE SPAIN.

tmerican manufacturers are well on the way to capture the Spmish marken with their products it is a said, becatuse of
 delivery. Large quantities are at present being imported.


Wholesale Distributors







## AIR CURRENTS

## Being Notes from all Parts of the World on Aircraft Subjects.





 speed of 273 hhlombles.

The first meth to ammb thagh oner the limeal state



 minutio. Four fuel and oil -tops mere mate.

It heath is umiter-ition of the l'mited state will comb

 "Pacific Aeronautics," on May 6 and 7. The race will b over a closed circuit of approximately 550 miles. The
 I rinceton, Williams and Cornell.

The airplane mail service of the United States between New tonk and (hicavo is mot only patimg for it. main.
 than $\$ 100,000$ yearly, according to a recent statement made
 ment of the service the department has been able to discontinue nearly $\$ 500,000$ worth of railroad distributing spate and derizal hime.

A Martin aiplane designed to supplant the torpedo
 United States recently and is reported to have over reached all requirements. The plane carries a torpedo weighing approximately one tone and can be launched from aboard




British aimplane manufactures are invadner the commercial field of the United States, according to recent re-
 of the country. Prominent among these are the Bristol, Avro and Sopwith.


 Linited states. Thirty airship of six, twelve, and fifty pass.nnuy: 1 Inty, will be used on Middle Western lines,





C:mada is the home of a !ritate Chmese at bation rehen!
 1.: the Thume Viatumatatic l agyne of Carada. The selhexi




 coss-1 of the conmtr!

Quotationis on h!ing hoas Wow rometly asked of an American airplane manufacturer by the Congo Mission of whe Deciph of christ. The impun! stated that the mission Whbe- 10 replace it - present thee of stam lannches with the: air and water craft.

A recent issue of a popular American magazine carries a ! !asing connest to the eflect that an air lime from Japan to China for commercial purposes is being contemplated.

1 Xisy tow naplane arrived in Xiow lork on May 2 , from Miami, Florida, having accomplished the flight in 15 hours :30 minutes with one halt at Moxo-head (ity, North facolina, for te filling her tanks. The mathome was equipgeed :wh a the homepower laterty engime. The airmen encombered a hoaty ramstom from Virgimia. but their progress was not impeded.

Here is a tentative air time table, which reads like an - जrept from Jule Vione. but which appared not long ago
 view of recent developments;
(ity Byair from Losodon.
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New Jork

## Vancouver

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Land and sea pre-war time

4 days
i) $\frac{1}{2}$ days

10 or 11 days
1.) dive

16 days
17 days
30 days


## NOTES FROM HERE AND THERE


















## JUDAH JOINS SHANGHAI GARAGE.

Will Manage New iy Opened Tire Department of I.scal Firm.













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 Man lome: -! 1 , hai air service.










## NOW FOR A SIX WHEEL TRUCK.

Goodyear Experiment Proves Value of Innovation






















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So more apmang fature can be found for muncipali

















## ESSEX

FOUR-CYLINDER


## AMERICA'SISMARTEST SMALL CAR

Unusual beauty and originality characterize the Essex. The Essex holds the world's endurance record-3,037 miles in 50 hours, an average of 60.7 miles per hour. Sole Agents
HUDFORD GARAGE DODGE \& SEYMOUR (China), LTD.

89-91 Rue Montauban<br>SHANGHAI<br>Phone Cort 322<br>Phone for a demonstration

# ITALIAN MAKERS ARE SLOW. 

Pesi War Rev.val Has Not Braught Expected Production.

## 




















 and the smallest of the three new models, ofticially known as



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 whead for this farm machine























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 than an! where else. These are practically no cars in private










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## HUDFORD A MODERN PLANT




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 and Xorth China branch of the finm is under the general


Ther Modron Siales lioom, Fronting on Iine Montenben.
management and direction of W. B. Faughwout, who is assisted by Juloyd Bland.

The Hudford Garage is water the direction of R . A. Hutchinson, who has recently joined the firm of Dodge and beymour as its director of motor sales and gamge mentong after having been in (hina for approximately one yeat studying motor and marketing conditions. Hutchinson comes from the linited statos with an oxperionce of a wide scepre in the mator of motor cars and their matketing, having first started through the plant of the Pieree Amow Corporakion, where he recoived at training in motor cat and automotive engineering. After taking this training, Hutchinson was sent to the Jacifie Northwest, where for five yours he acted as factory sales representablive of the company. Altor severing his comnections with the I'i: te: ('ompany, he was later associatod with some of the fropest selling agencies of the l'acific Coast region and gained a

 a knowledge fiom ti: inside of motur car -aviee wht ald... manship, and is now adapling thes mololl muth i- in . . . in China












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Continued en Page 69.


[^9]
## SOME ACHIEVEMENTS OF

## "SHELL"

## "Daily Mail" $£ 10,000$ Prize

London-to-Manchester Flight, won by Paulhan in igio on "Shell" Spirit.

## "Daily Mail" $\mathbf{\text { E } 1 0 , 0 0 0 ~ P r i z e ~}$

Circuit-of-Britain Flight, won by Beaumont in igir on "Shell" Spirit.

## All Prizes

In the 1919 Aerial Derby were won on "Shell" Aviation Spirit.
"Daily Mail" $£ 10,000$ Prize
America-to-Europe-direct Flight, won by Captain Alcock in r919 on "Shell" Aviation Spirit.

## The Australian Government $\mathbf{£ 1 0 , 0 0 0}$ Prize

England-to-Australia Flight, won by Captain Ross Smith in r919 on "Shell" Aviation Spirit.
All Aviators participating in the ROME-TO-TOKIO Flight are using "SHELL" AVIATION SPIRIT

THE ASIATIC PETROLEUM CO. (North China), LTD.

## PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER CARS

##   

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Model Motor Ignition Lighting wB Tiren Rius Pans．Pila．I＇inn．Sonlan

| MONROE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| s－9 4－3年×42 | ．．．．．． | A－Lite | 115 | $32 \times 33$ | SS | 81210 | $\$ 1440$ |  |  |
| MOON |  |  |  |  |  |  |  |  |  |
| 6－48 6－3 $3 \times 4 \frac{1}{2}$ | Delco | Delco | 118 | $32 \times 4$ | SS | 2285 | 8185 |  | 83185 |
| 6－68 6－31 $\times$－5 ${ }^{\frac{1}{4}}$ | Delco | Delco | 122 | $35 \times 5$ | SS | ．．．．．． |  | 8．27．30 | 3750 |
| MOORE |  |  |  |  |  |  |  |  |  |
| $30-\mathrm{F} \quad 4-33 \times 4 \frac{3}{3}$ | A－Lite | A－Lite | 110 | $80 \times 38$ | （2） |  | 109.5 |  |  |
| MURRAY |  |  |  |  |  |  |  |  |  |
| － $8-3 \frac{1}{4} \times 5$ | Dixie | Wsths | 128 | $34 \times 4 \frac{1}{2}$ |  |  | 3500 |  |  |
| NASH |  |  |  |  |  |  |  |  |  |
| N．ISH |  |  |  |  |  |  |  |  |  |
| $\text { NATIONAB. }{ }^{43 \frac{3}{1} \times .}$ |  |  | 112 | $32 \times 3 \cdot \frac{1}{2}$ |  |  |  |  |  |
| NATIONAL |  |  |  |  |  |  |  |  |  |
| NELSON |  |  |  |  |  |  |  |  |  |
| NOMA |  |  |  |  |  |  |  |  |  |
| I 6－31 $\times 4 \frac{1}{2}$ | Delco | Delco | 128 | $31 \times 4.2$ | SH | 2800 | 12900 |  |  |
| NORWALK |  |  |  |  |  |  |  |  |  |
| OAKLAND |  |  |  |  |  |  | 1235） |  |  |
| 34－C 6－2133x43 | Remy | Remy | 115 | $32 \times 4$ | SS | ＋116．） | 1165 |  | 1825 |
| OLDSMOBILE |  |  |  |  |  |  |  |  |  |
| 45－B $8-2 \frac{7}{8} \times 43$ | Delco | Delco | 122 | $33 \times 4 \frac{1}{2}$ | SS＇ |  | ＋2045 | 2015 | 9950 |
| OLYMPIAN |  |  |  |  |  |  |  |  |  |
| $4-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Conn | A－Lite | 116 | $32 \times 3 \frac{1}{2}$ |  |  | 1.58 .5 |  |  |
| OVERLAND |  |  |  |  |  |  |  |  |  |
| OWEN－MAGNETIC |  |  |  |  |  |  |  |  |  |
| W－42 6－4 $\times 5 \frac{1}{2}$ | Bosch | Own | 142 | 35x． | SS |  |  | 7000 | 7500 |
| PACKARD |  |  |  |  |  |  |  |  |  |
| 3－35 |  |  | ¢136 | $3.5 \times 5$ | SS |  |  | （5．5．513 |  |
| ${ }^{3-25} 12-3 \times 5$ | Delco | Bijur | 112x | $3.5 \times 5$ | SS | 1.5200 | 5200 | 1．52．50 |  |
| PAIGE |  |  |  |  |  |  |  |  |  |
| 6－39 6－3，$\times 5$. | A．Kient | Gdid | 119 | 3：34 | Si | 1770 | 1770 |  | 2495 |
| 6－55 6－32 $\times 5 \frac{1}{4}$ | A．Kent | GぐD | 127 | $33 \times 4 \frac{1}{2}$ | SS |  | 12100 | 2500 | 3095 |
| PARACON ． |  |  |  |  |  |  |  |  |  |
| PATELSON ${ }^{4-3 \cdot 3} \times 5.5 \frac{1}{4}$ |  |  | 122 | $32 \times 4 \frac{1}{2}$ | SS | 3000 | ．．．． |  |  |
| PATELSON |  |  |  |  |  |  |  |  | 2600 |
| PEERLESS |  |  |  |  |  |  |  |  |  |
| 56 －8－3 $\frac{1}{4} \times 5$ | A．Kent | A－Lite | 125 | $34 \times 4 \frac{1}{2}$ | SS |  | $13,0.50$ | 3050 | 3900 |
| PIEDMONT |  |  |  |  |  |  |  |  |  |
| 6－40 3 10 $\times 1{ }^{1}$ | Remy | Remy | 122 | $32 \times 4$ | S＇ |  | 1865 |  |  |
| 4－30 33x5 | Delco | Dyneto | 116 | $22 \times 3 \frac{1}{2}$ | SH |  | 1395 |  |  |
| PIERCE－ARROW |  |  |  |  |  |  |  |  |  |
| 486 | 1）eles | W＇sthes | 142 | 3\％x．5 | （1） | 76.50 | 7650 | 7750 | 9250 |
| 38 6－4x51 | Delco | Wsths | 134 | $34 \times 4 \frac{1}{2}$ | Sis | 7ツ－90 | 72.50 | 73.50 | 2．j） |
| I＇IJOT |  |  |  |  |  |  |  |  |  |
| 6－45 6．31 $\times 5$ | Delco | Delco | 120 | $32 \times 4$ | SS | $\dagger 1850$ | 1800 |  |  |
| PORTER |  |  |  |  |  |  |  |  |  |
| 4．4．6．963 | Borling | W：${ }^{\text {dre }}$ | 112 | 3.85 | SS | ．．． | 19200 | 9400 |  |

## 

PREMIER
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ROCK FALLS

SAYERS


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 ＊ 6 －passenger．$\dagger 4$－passenger．$\ddagger 3$－passenger．

[^10]
# AVIATION HAS COME TO STAY IN CHINA <br> THE AERO CLUB OF SHANGHAI HAS MADE ITS PLACE <br> ARE YOU A MEMBER？ 

# BRITISH MOTOR SPECIFICATIONS AND PRICES． 


T＇ine W．TIN chats，i，
 In the sign x are ey linder linersiuns in centinteters．

 5－ッい．er Tontims
 1．hp．
8 h．p．
AIRDALE． $4 \cdot o y l .69 \times 12012 \mathrm{~h} . \mathrm{p}$. Chassis 1．anale Touring 4．asater Touring



ARGYLL．4－cyl． $80 \times 13015.9$ h．p．Chassis ．．．．．．
ARMSTRONG－SIDDELEY．G－cyl $90 \times 13329.5 \mathrm{~h} . \mathrm{p}$ ．Chassis 720
（ $+10 \%$ reserve）
1－seater Tourina －Torel Chassis Chassis Stambard Morled 7 －seater Landaulot
AUTOCR．IT．4－cyl． $69 \times 10.211 .9$ h．p．Chatisis 2 －seater

2－seater
2－seater，Coupí
4 －seater，
h．p．Chassis 11 h．f）．Chathis 2 －seater
4 －seater Touring －－ceater Touring －12 h．p．Chassis．右
$\qquad$ 3 －seater
C．\LTHORPE．4－cyl．65 天 9510 h．p．Chassis． 1－seater Tourin：

36）（ans． 17.5 （ins．
\＆1，050
1．35．

－Cors．Chasis
321
31.2

1，300
1，000
 700
DIX－LEEDS． 4 －cyl． $64 \times 10010$ h．p． 2 －semem 36.
（）Coup～ 0

2－seater


550
KINGSBURY，Jr．2－cyl． $85 \times 908$－10 h．p．2－seater ．．． 262


MASCOTTE． 4 －cyl． $69 \times 10010$ h．p．Chassis ．．．．．． 415
3－seater．．．．．． 450
4－seater Touring 475
MH．．NTP．t－cyl． 64 \＆s？ 11 h．p．Chasis … ．．． 2011
MERCURY．4－cyl． $64 \times 10210$ h．p．Chassis ．．．．．． 329
METEORITE．4－cyl． $66 \times 10911.9$ h．p．Chassis … 375
2－seater ．．． 450
MORRIS－OXFORD．4－cyl． $69 \times 10211$－20 h．p．Cha～－is $34 . j$
4－seater Touring 495
2，100
2，625
59.

5．j）
695

RICIIRDSON．
250
490

ROLLS－ROYCE．6－cyl． $114 \times 121$ 40－50 h．p．Chassis．．． 1,850 Complete 2,500 to 2,800
－ 0 －seater Touring－． 750
 STNGER 5 -seater Touring 630 SIZAIRE-BERWICK. 4 -cyl. $95 \times 16025-50 \mathrm{~h}$.p. p. Chassis ... 400 95 505 STAR. 4 -cyl. $80 \times 15015.9$ h.p. Chassis $\quad \begin{array}{llll}2 \text {-seater } & \ldots & 545 \\ 500\end{array}$ 5 -seater Lourms

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5 \text {-seater Touring }
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\begin{aligned}
& 75 \\
& 0
\end{aligned}
$$825

STOREY. 4 -cyl. $85 \times 13220$ h.p. 5 -seater Touring ... 700 4 -cyl. 14.3 h.p. Chassis 525 TRAKER-SQUIRE. 6 -cyl. $80 \times 13020-25$ h.p. Chassis ,200 1,600 SUNBEAM. 4 -cyl. $80 \times 15016$ h.p. Chassis ...
TALBOT. 4-cyl. 101.5 x 14025 b.p. Chassis ... ..... £1,050
THOR. 4-cyl. 15.5 b.p. 2 -seater... ..... 1,330UNIC $4-\mathrm{cyl} 13 \mathrm{~h}$

VARLEY-WOODS. $\quad 4$-cyl. 69 x $12012-22$ h.p. Chassis 567 ..... 567$\begin{array}{lll}\text { VAUXHALL. } & 4 \text {-cyl. } 95 \times 14025 \mathrm{~h} . \mathrm{p} \text {. Chassis } &$|  4-seater Touring  |
| :--- |
|  | <br>

1,060\end{array}
5 -seater Touring 1,450
4-cyl. 30 h.p. Chassis ... ... ... 1,275
5 -seater Touring ... ... 1,665
VULCAN. 4 -cyl. $90 \times 13020$ h.p. 5 -seater Touring ... 1,000 ..... 1,000
4 -cyl. 16 h.p. 5 -seater TouringWAVERLY. ${ }^{4}$-cy-cyl. $76 \times 12715$ h.p. Chassis $\ldots . . .$.
5 -seater Touring...475
WESTWOOD. 4 -cyl. $69 \times 12011.9$ h.p. Chassis ..... 500
4-seater Touring... ..... 625
WOLSELEY TEN. 4-cyl. 10 h.p. Two-seater... ..... 500
Three-seater ..... ,Coupé
WOLSELEY FIFTEEN. 4.cyl. $80 \times 13015 \mathrm{~h} . \mathrm{p}$. Touring ..... 600

Saloon ..... 800

## BRITISH IVIOTOR MAKERS BLACK LIST PROFITEERS.

## Motor Trade Association Acts To Protect The Public.

The American Chamber of Commerce in Tondon reports something now in motor car advertising in (ireat Britain the departure being a quater page space in the "Times" and ottar leading nowspapes, amoun ing the plans of 11.3 manufacturer mombers of the Notor Trade Areociation for black-listing profiteering middlemen.

In a well laid out advertisement with the bold heading "To stop motor profiteering," the Motor Trade Association says to the British public :-
"The sholage of mators has brought alont, as everybody is aware, a great deal of profiteering. Orders have been plaed for cars by persons who did not require them. Taking advantage of the priority of detivery secured in this way, they have made money by selling these cals at a hig premium. They have stoped in hetween the shaghtforward dealey and the gemme boyer, fikshong hasimes from the former and mones from the later:
 profitecring on food or any other commodity, and is contary




 privale polite a





Cars which have passed from one hand to another in thi irregular way will be black-listed.
"The manufacturers ansoriated in making Hha. announcement regard the matter so seriously that they re-
 after-sale service and attention, that would otherwise be given.




The Sineriean Chamber in Tomden peint: ont that thes Motor Trado Association, is an atsonciation of fioms an?
 and accessories, and is unique in that one of it ohbor- is (6) protect the intirele of 12-1- ol maty





## SPEED BELONGS TO THE U.S.A.









## THE LITTLE THINGS ABOUT YOUR CAR














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We could use this whole page，telling you about the Hupmobile but we don＇t have to！

Max Friedman， Sales Manager．

## THE SHANGHAI GARAGE Co．，Ltd．

（）隹に VINに

THE STAR GARAGE AND THE EASTERN GARAGE Our Main Show Room，at Star Garage， 125 Bubbling Well Road，Shanghai．

## THIS: IS SAID TO BE THE WORLD'S SMALLEST












Gasoline Occupics The Spotlight

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 bublue : lios





 507-74


















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 bilouling baty, morally and financially






 tions of "passing the buck."

## LEADING THE AUTOMOTIVE LEAGUE







THE SERIIS 20 CARS perpetuate the Studebaker reputation which, for sixty-eight years, has stood for high quality, honest dealing and fair prices. They are the creation of the studebaker orgamisation of competent engineering and manufacturing experts, and are produced in large, modern plants unexcelled
 in the industry.


IN design, performance and quality of materials, Stude baker care are litet srade and the prices at which they are sold, when figured on a basis of price per pound of car weight, will compare more than falombly with the prico of hathoy
 arll at much higher prico.

Beautiful in design
Thoroughly modern Mechanically right
Exclusive Agents for Cicutral and North Chiner

# CHINA NEEDS FLYING FIELDS. 

## Develipment of Aircrafi Depends Largely on Acrofromes.

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 certainly, the landing places for the planes canying an
 time when such services will bo in operation.




 for dealing with all matters of small repair, supplies and the










 timiting the services. It has freyucsutly been pointed out that when competing railway companies have to provide

 most convenient sponts, which mems that they must he where the price of land is the highest : and in consoquen -




 vision of acrodromes, which would as a malter of fact









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 (1ll: (im mment itself provide them for its own services,


## They Just "Dropped In" From Rome. <br> 




 730 kilograms : plane surface, 26.9 square meters ; speed 215
 Itelian in make, six eylinders, 220 horsepower, with $1,6.50$ revolutions a minute. The new type was first tested in 1919 and after some improvements is the machine now in use.




The jumme juat mate comptal :-2 it is in lhe la. 1 lWo




 Ah. - ppirit of daring is still alive and active in the lwoms of IVnain
 that he would like to attempt a trans-Pacific flight to the

 sunction.


When you buy a (romelyar Tire you … something more than a rubber cover to hold a lot of air.

Youlget a pewteded prodthel and the conoperation and continuing helpfulness of our Service Station.

We may sell you a tire, but the transaction is now complulid.

Rehind that tire you recoind what is known as "Goodyear. Service"-a service that leads your tire to Maximmm mileage.

Goodyeares Service is Courteous and Efficient

## SERVICE STATION DEALERS



125, BUBBLING WELL ROAD.
PHONE W. 197-131.
SHANGHAI



## CORONA " 12 " MAKES DEBUT

New French Creation Carrics 5 Year Guarantce.














 almminium cover hides both the valve-oporating mechanism,
 wollor-heerings, with a double thrust batl-reace at the flywheal

 systom is employed for the engine, with pressure feed to all
 sank, and from there is sent to the engine and back to the fanh hy the scatenosing bump in the buse chmomer. The



 change-sprest lever. 'The properller shaft is enchosed, and it







 double thpe for cach set of six collinters, this being equivalent








 lead for the front-hub pair. Operation is by pedal or l s...
 ings, are used for the wheel-hubs, which are interchange-
 1.50 mm . Springing is semi-elliptical front and rear. The


The makers give a five years' garantee, which is appli-

 time it changes lands. After a car has covered 60.000 miles, the makers undertake to inspect and overhaul it completely



THE NEW MOTOR CAR and the Greatest Improve. ment in Riding Comfort since the Introduction of Pneumatic Tires.

The Triplex Springs of new Overland 4 make possible the first light car with the steadiness of a heavy, long car.

The cost of upkeep is low because the Triplex Springs protect the mechanism from the usual read shocks. Light weight creates great economy of fuel and tires.

## CENTRAL GARAGE COMANY

2A Jinkee Road

## ALL SIZES <br> OF <br> GOOD YEAR TIRES IN STOCK

SHIPMENT JUST ARRIVED
Phone C. 3804 aUTOMOTIVE SUPPLIES CO.

602-3 Thibet Road. Cor. Ave. Edward VII SHANCHAI

## MOTOR CAR INSURANGE

## IS YOUR CAR INSURED?

OUR POLICY COVERS EVERYTHING THAT
CAN POSSIBLY HAPPEN TO A CAR AISO
COVERS LIABILITY TO THE THIRD PARTY

BEFORE INSURING YOUR CAR GET OUR RATES

PROMPT SETTLEMENT OF ALL CLAIMS

## ASSURANCE FRANCO ASIATIQUE <br> 7, Ayenue Edward VII. Shanghai

1. I:E! DIA 二 M. SPEELAIN, General Munagers.

## Agencies:

TIENTSIN, 45, Rue de France.
HANKOW, Anderson, Meyer \& Co. PEKING, Regine's Building. HONGKONG, Gérin, Drevard \& Co. B.ANGKOK, E. C. Monod \& Co.

Belgium Is Beating Back.













 all the machinery was taken away, the furnaces were pulled







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 trade, and that connecting rods, valves, gear blanks, and








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 While grateful for the scception given them, came back with




$\gamma_{\text {fllburn }}$ LIGHFT ELECTRIC

## Milburn Light Electric

## Combines Beauty and Economy

While everyone admires the elegance and refinement of the Milburn Electric, its owner enjoys the benefit of economical operation.

To anyone who has not experienced the delights of electric driving, a Milburn is a pleasant surprise.

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## NO 1920 SHOW FOR FRANCE.

## Exhibition in Grand Palais Set for 1921.

There will be no automobile show in Paris in 1920, the next exhibition in the Grand Palais having been fixed for the fall of 1921. This is the official decision of the majority of the French automobile manufacturers. At present the French industry takes the attitude that a show every two years is sufficient. Manufacturers also claim that, having made a great effort to get out new models for the 1919 show, and not yet being fully in production on these models, an exhibition coming in tho fall of 19:20 would only divturb tie industry and, hold back production. This adtion has been taken in the hope that Fingland, Bolgium and Haty whil follow suit, thus abolishing ali European automotile show for the present yoar.

It is doubtful if the French makers can induce ontay continental countries to follow their exampl Vimglam1 :atready committed to a show in the latl of lasel, :and Belgian makers, who were mable to stime a lom has … have deceded to hold one next winter. 'The same :pplion', the Italian industry, which has mot bot lanl a post-x:at

 obliged to alter thoir plans, and to stane as -Hm alte. ...1?

exhibition, there is a strong minority which protests again... this action. This minority points out that Fremeh makio will lose prestige if all other European countries hold a show and Paris is showless.

French makers, too, are out for export business an l would be ohliged to take part in any exhibition heded a Tondon and Brusels or Thrin. Having (o) prepare mod for these shows they might as well prepare them for the is own cxhibition in the (irand Palatis.
 no intention of abolishing our salese department." -hate .ane leading Fromeh mambiaturer. "and it wombl la piat :-
 peremt time we ato mathe to med demand









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## GERIMANS SEEK SPEED ENTRIES.

## Inquiries Made to U. S. Speedway Officials.

Ofictals of the Indianapelis Motor Speedwas hm in : dilemma, due to the receipt of several carefolly guaded inquinies from two countries with which the T'nited sitate in still officially at war, feeling out the sentiment that would greet the entry of Merecles and dustro-1)ainler t.ams, is (ieman and Austrjan designation, repectively, in the som mila rare on the Indianapolis speedway

Indenbedly, if the entry of suchi teame were admitt. i. they would prove a drawing card, and the rate would ha:
 on the famous track. However, the men directing the speedway affairs are dubious concerning the altitute of sh publice, figuring that the appeatance of the 'Temtame (on tonders might give rise to violent demonstration, "1". possibly danger of permal hame
 would be the situation, they feed, if one of the sepmeme
 mothing more umpopular comld te im:

 question.



had been healed by the soothing balm of time. In 1914 Mercedes again captured the histuric went. Whin tien


 that accomplished this feat, the same ivpe of emsime if as
 tive memery on the part of the allies in the per ant woth


 aviation program had reached astage of efficetme in adram



 thes extend an intimatom to racing beme form (bemene









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 BRITAIN.Rumor that Duty May be Removed and Otherwise.









 contemplate removing the tax with the introduction of this



 importing from the [.. S., has asked Sir Auckland Gedde.




If theme is 1 me pomblits of the memenal of the tads, it is
 of eif. It. on the wher hand, the lad is to be remoted the Government will be asked if they contemplate any - 1 dncement for cars in the derchs at the time of the removal.
 car- when added to the depreciated purchasing power of the panded -rolng and the hugh treight rates. mates it impen-- ll i.e tur all an Smeri-an car in (ireat liritain at much below double its American price. Commercial vehicles have l.ans free of import duty throughout

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[^11]juat-var matior atr.

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## AIRCRAFT FUSION IN GREAT BRITAIN.

Future of Manufacturers Depends on Amalgamations, They Say.
(ommercial interest in Great. Britain has been con siderably aroused, says the American Chamber of ('ommerre in I condon, by the amouncemont of the atmatgamation of the Aircraft Manufacturing Co . with the Birmingham S'mall Jrms ('o., Lid.
'The former firm, of which Mr. Holt 'Thomats is the founder, chaiman, and manoging director, are the wetlHown makers of the Aireo airphnes, which gented at dislinguished reputation during the war, and are mow emploseat (on the I onden-P'aris air mail servere. The 13, S. I, Emelnatere a momber of fims and represents many and v"luius interests, its products including explosives, arms, bicycles
 ing ('o., will be matatanod whd the mamolacture of lires airplanes will still be continued under the direction of My Holt 'Thomas.
 What is likely for hatpren in the loritish aimplam induate


pelled, thomgh lack of smplote either to camse bunimess altogether, or to produce amplames mexely as at side lime.
(ommmexial aviation in its presemt form do is mot ofter

 tion bewteen overhead and running charges is still disproportionately great















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Italian Makers Are Slow.







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 that the wholl of the rolum motpue woild her for caport, and
 "Louls 11 sontd kill out the intermediaries who by their
 whmes The tenvlency would be to cheapen the price of




 understond lye foteign rivals. A foreign manufacturer migit 1.31 a little difficulty in understanding why another nation


 project stage, and another solution of the difficulty may bs found.


## MANILA WANTS A MOTOR CLUB．

Philippine City Sees Need of Strong Organization．
（＇hanfloms and other trouhtes secem to bate comvine at least a part of the motor wwors of ME：nile that the city Frds a strong monom ar orgmization for ibe froterion those who own and operate them．The success with which automohile celubs have and are operating in the various
 doubthere convine d them of this mecel．
＇The following exerpt from＂Far Rast Iviation， Manila pulslication which is foming some of its allemtion？ from aneraft to antomobiles，deals with thes subjeet
 in the wotd whe\％allomobilises ate in momber．Xantly


 pressing







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 beober regerted te：the Bureath but we do kemen that there are
 ment loy chandiours．


 is 1rusf worthy．

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## MAYTIME FOR AIR CONGRESS.

Third Pan-American Event to be Held at Atlantic City.



 if Solvonen

Thimtr-(wo countries, $4(0)$ arero clubs and five thousand othur onqanizations and representative industries have been
 - Bitmer Colv. Misy sith.

 mission organizing the First Aerial Derly Around the World and Major ('harles J. (ilidden, the originator of the Glidden
 sterted for the trip around the World last October, have
 and other organizations of all the countries visited.

 ing the sport of aeronautics since 1901, when he first piloted : Af invented dirigible around the Eiffel Tower in Paris, is the Chaiman of the C'ommittee in charge of the Congriss.

 Aerial Iuague of America, the Liga Aerea de Cuba, the Serial 'louring Association, the Aero Club of Atlantic City, and the A:ro C'luh of Texas

Mr. Santos I mmont, who is vice-President of the Lem ('lub) of America and President of the Pan-American Aeronautic Federation states that "aerial transpon"ation and iarria" Sports will knit the states of the IVestern-Hemisphere int, in integrally united, co-oprerating and friendly combination, allied for well-being in sport, trade and commerce as well as for strength in time of possible war.

Is chainnan of the Pan-American Aeronautic Committea the has been travelling through South and Central America.


This Congress will open a new epuch in aerial sport which

 with prizes amounting to over $\$ 2,000,000$ open to American

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regulations for the Pan-American Aerial Derby, the Aerial Derby Around the World and Aerial Circuit of the Atlantic are to be discusscd during the Congress at Atlantic ('ity With the Iatin Amcrican countries spending millions of dollars in aeronautics, the Pan-America aeronautic movement, which was started in 1912 by Aero (lub) of America officials, has grown to mean a great deal to the United States, British, French and Italian aeromatic industries. The orders from Latin American countries received by the ('moss Aeroplane and Motor C'ompration amount to *500,000. Among the exhibits abready assured, which make the lixmsition intermational in chameter are the following alyNames; the latest C'urtiss', ('aproni, Avro, Sopwith, Bristol. Cincoln-Standard, Handley-Page, "Ace", Farmant and biregnet and other Ammican, French, British and Malian planes. There will ateo be a laweon wabigt, and the 'amblever Aero ('omp:any will whitht whe of the "dat anse:" plans which they are hailding for the (iordon bemmet
 Cnglish and Italian types.

 hose to be used in tha (iondon bemmell laillow Traph
contest will be included in the lighter-than air exhibit. It in cxled that all reconds in the sale of airer 11 for pleasure ois it and transport will be broken at the dermantic Exposilicm, which will te held at the Steel Pier, Itlantic Citw, during the Congress.


How Lamdon is resulatmes its Prathe. Fratte e.mathline in



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## CUT-OUTS TABOOED IN SHANGHAI.

Municipal Council Passes Regulation Forbidding Their Use.
('ut-outs and other devices providing an open exhaust
 Municipal Council of the International Settlement in a recently published regulation which became effective May 1. The regulation is an amendment to the motor vehicle license eonditions and reads as follows :

 to the public. The use of a cut-out or other device providing


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## MAGNETOS ARE INDESPENSIBLE.

## Overseas Owners Find Their Use a Necessity.

Whatever may be the ultimate verdict in Great Britain regarding the choice of electrical ignition systems, where overseas usage of the automobile is concerned no doubts seem to exist upon the point, and the magneto carries the poll by an overwhelming majority. For overseas use the magneto is almost an absolute necessity. In many climates getasons occur during which the car has to be laid by for a period of time, and under such conditions the electrical storage battery does not show to advantage. After it hats once been put into use, it cannot be leit without periodic attention and recharging, or doterioration sets in. This result is not the fault of tho bathery, bat is part of tis nature, nor shonld one blame at willing servant for a constitutional disability.

Judging by the conktant complaints from mondor owners who have the br habitation in the far comers of ther carth, when cars equipped with battery ignition are stored, it happens very frequently that they camot at once he pat imb commission again without delay, becouse no ignition spark ran be ohtained to give ater intitial runt to the cegime for the purpese of recharging the accummlators. In sinch case Un policy of carving the egers of g gition, statims, and lightins:


magneto enthusiasts against the battery faction, wem in this country, where facilities for recharging are comparatively widespread.

Electric starting and lighting systems are the slaves of the motorist, but ignition is his master. Without the former he is still able to travel : without the latter he is immobilised. and cannot drive his car a yard. Hence, to be satisfactory for overseas work, ignition must be dead reliable, solfcontaimed, and ready at all times for instant work. Irver w the war British magnetos were comparatisel? litale usod, and were produced at at weok! rate of tens and thentios: bun. as a mesult of the great upheaval, the ato now manmatumed at the rate of thousimds per werk, and hats moned themselves to be, not omly as well made as the pre-liar (isemment article, but to be superior in efficiency

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 lat. make !ne chont wanceal the fate that they ar: milizne the par- domend tor dhe Smerican car. It i-
 trade of $1: n=1$ and.
 d Homion med -hont ather. The dearipton of the car in practically that of the Ford. The only differences in desinu are on the radiater whith is of the bullat mow type the win : shield, and Michelin dise wheels instead of the conventiona!


## The phe of the cal in li-tod at E-2.j

 are in I condon, it wa- whlained that for present parts of in .

 the compans imends to meke more and more of its own part-athl con-trum all of itelendice so that the machine wit eventually become an English made product.

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 economy. Roth organizations have the emme gatal pme pose in seeking conservation of supplias. and then is-better b, usiness.

The dealers have agread to work with the edomber in having (extablistard a miform lat rate for adjusting mas. buctus. It is prolable the Per fixat for all prow of th country will be $\boldsymbol{W}^{\mathbf{1}}$. Dealers are said to be responating
 their business liy bringing them int.) choser emomel wilh their customers.



 will resuld in the discovery of a scrow lons soment here in lh.


 texalt in increased sales of :anplitios.

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 tion with starting the engine in cold weather. T. . In 4













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## AMERICAN TIRES INCREASES IN PRICE.

## Advance Greatest in Pneumatics With Solids and Tubes Following.

Increason in tire prices in the United States, ranging from 10 to 25 percent, became effective March 8

Pnoumatics lad with increases of 15 to 25 percent. Solids showed increases of about 10 percent, and slight advances weie made on tubes.

Fimmors of the impending advance ibave been current for several weaks-in fact, so jar lack as last Octolor the trede was fecpared for the riso, but it did not materialize. Thi; was chiefly due to the fact that efforts have been made by many of the larger companies to maintain the present prices by increased production and intensive sales cfforts.

The rapidiy rising cost prices, contributed to largely by the upward irend of cotton for tire fabrics, aro now declared to have made an increase imperative. Although there has been no appreciable increase in the cost of crude rubber, tire fabrics have been rising steadily, the cost of corl fabrics now being quoted at a figure 150 percent in advance of costs a year ago.

This rpward trend in cotton began a fow weeks after the tire 1rices were decreased in the spring of 1919, and it is now declared that the decreaso would not have boon mad? at that time if conaitions in the cotton market had been anticipated. The lailure of the Sea Island cotton crop aggravated the situation.

The Fuelizer, as it has been perfectod to beeomo a elandard part of the Packard motor cars, gives the maximmm heat to the chage whon the engine is starting and idlimg. and drops out of operation when the ongine is able to supply its own heat. It gives complete combustion of the fuel in tho cylindors, and during the months of test thore was mos a single matance of congine fouling.

The Fuldyer consists of a small supplemontary carLometor and a laming chamber where the gat from the little carburetor is lumed. This chamber is situated in the intake menifold. When the gats entere, it is ignited by e regulation park plug, and passes into the fowh chagg goins ferm the canturetor to the evinders. 'The heat of the berme gas (danges tho wei, poosly caldureted mixture to at dey vaper, which explodes with full officiency when it is touchai off ley the apark in the crlinder.
 ond involvinge a cingla moving pert. When the cogine is Farting the lrwelizer is in foll operation, and tho lowe sump phed to tho charge becomes less as the thmothe is opmond This regulation is proveded by an :if-value smilas in of m fion to the: air-vatre of the main sathmedor.
 the Finelizes may bo sexon. A porfect misture produces is

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The Shanghai Horse Bazaar and Motor Company L.id.. Takes Over Aircrafts.













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 -I oul ole mellyamen vowher is amelles. all of which tends








 entitely removed, by careful designing with accessibility


Th :



 are opreated by an overhead camshaft for each line of cylinders. Rocker arms with an adjustable mechanism for valve



The lony cruising motor designed for trans-ocean trips.
stee？housing，which both prevents oil leakago and adds to the clean appearance of the emgine．

Each overhead camshaft is operated by a bevel gar mounted on the contre of the wank shat and an inclinel and enctosel moft．The cankehaft is carred in fixe intermediste bronze bearing lined with white metal，amt
 abminime alley typ with cest inon ringe．Thate are two masketos mounted centrally with their distributors forming outwords，and pleced midwey betweon the two（enburatis are four in number，being one for ereh set of the．．．colimders． Tho promellers is a geared down type，with a ratio of I to 1．51．The reducing gears are bebing－bons type and the propeller sheft is of very hig dimeser，and is monted on heavy radial and thrust ball learings．Cylinder bora is 120 mme with a piston stroke of 150 mon．＇The engime devehps 400 h ．1．at 2,3100 revolutions，and gives its meximmon of 42.5



















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が水
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## The Gasolene "Economizer"



THE CONTINENTAL IMP. A EXP. CO.
tivelunte Azomts for Chma

Phote C. 3uns

## Every issue of THE ORIENTAL <br> MOTOR comtains a Buyer's Index (i) adrertised goods. This is for your consenience. <br> See Page 80.

aUSTIN TO HAVE U. S. PLANT.
British Motor Manufacturer Locates in New York.











 (11)

## AUTO SHOW FOR BELGIUM.

International Exhibition to be Held in June.

I: :14. lime of the -

 exhbition will include seven classes: the earriage building









THE NEW "SPECIAL" DAIMLER.



# NOW OPEN FOR BUSINESS <br> FIRST CLASS MOTOR REPAIR SHOPS 

All kinds of Motor Cars, Motorcycles, Marine and Stationary Engines repaired.
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Experts in Auto Ignition, Starting and Lighting Systems.
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All work is done under supervision of Qualified European Mechanical Engineers.
Shop now open to inspection of Motor Car owners. SHANGHAI MOTOR REPAIR CO.
11 Boone Road SHANGHAI Phone N. 1951

Hudford A Modern Plant.
(Continued from Page 34.)
In addation to this, tho garage lase as its present aquipmont the latest machincry, bather, tools, ete, for the carrection and adjustment of mechanical defects, and is prepared to givo mechanical service, such as the replacement of broken parta, the complete overhauling of the motive parts, and everything that may be demandod of such id deparment. All of this work is done under dose amb exacting foreign supervision and when a finished joh laves the shop, the owner of the motor car can feel satisfied that he has rexetred such attention ans loe wonla ractive in any factor: of gatage of the highest standarts any plese in the wople

The garage is espocially equipped to do commercial boly buiding and overnationg of bodics, anch ats pambe.
 ad for the esomat motoring publie.





 makess of tho motoring word and maintains a sarvion : tation in cemmection with it.

## WHAT "PERCENT GRADE" MEANS.


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 20) percont grade, for instame !om know that h. man
 I foot for every 5 feet of level forward motion. If




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WILLYS PLANS TURNOUT OF 800 DAILY

[^13]
## BODY BUILDING IN SHANGHAI



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U. S. CARS PRICES GOING UP.

Demand and High Material Cost Given a; Cause.































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 material continmes to adrane it will be nocessary to molven prices, and we believe that every other antomobile




Anotleer saly: " "TVolouhtedly we will advance within




















DEVIL MAKES ROADS CROOKED.
Everard Thompson Tells U. S. of Superstition.
Tiverard Thompeon, who was recently in (hhen prepar ing a trak analysis for the Fitstone Tire and Romblow ('ompany, was timat the greatest deterent to mororing in ('hims is the yigrag reads, according to a reant American motor magazine. The lightning-tike phyegromy of the highwy is dee: to thes sugeratition of many conturios that the dest invariably fursues his intend ve vetims ipmen the main highway. Also that his Satanie majesty is short-sighoded.
 affliction, would rom hoadlong into buttocsuses along i.f. highway because foe combld not see the furn in the gond b.

 oluded the exil eye and elouteh.
 When theoe kinks are iromed out the antomohit. will :-a :
 Whe drives ther mat.


 Bridge. A reception was hedd on the mponing diy


## THE SUNDAY ORGAN

## rul

ENGLISH-SPEAKING PEOPL IN Shanghai
"LLOYD'S WEEKLY."
ONLY SIX DOLLARS A YEAR.

# OUT TO THE HILLS BY CYCLE. 




Shanghai Drivers Make Journey io The Hills With Difficulty





Ma':







71.0. $\boldsymbol{i}$..........
i... . S. Stay.


 p.ant.







 a haret histames.

I path whe deanveral atere whinh cromed the rallewal to che upht and whioh w.a- polle Wod motil it ontolat a crowk. Hole a scond thotgath wat tollowed, whieh whth the dx-



 1, ridt- and othos where the wathon. hat to be carri".

 of siking with no success the machine was loaded into a s.mpar atal th. lant thea mbles of the jommer mate lis.


It the llills Wre wavelere suet a thind metor excli-t wi"






 the possibilities of operating a motoreycle where even horsi





the use of motorcycles in China have been advocating their 4. atel alling attmion to the ir admpalility to preent comuts anmhtion: and allily a trip as this one concretely. shows the posempilities opeded.

## LET US <br> DEMONSTRATE!



Model 19

## 5 回


Excelsior Motor Cycle

CENTRAL GARAGE SERVICE STATION, 27, Weihaiwei Road or AMERICAN TRADING COMPANY,53, Szechuen Road Exclusive Distributors for China.

## MOTORCYCLES SHOW UP BADLY.

British Win International Reliability Trial.
Out of seventy motor-cycles which left Paris in Febraary for the 1,000 miles reliability trial to Nice, only fortyfive reached the destination under the conditions laid down by the rules. French machines were in a mimority, but they never showed u! very britliantly, for with the excoption of the 20 ) ce. light class, they only won one first prize.

Jhes trials were based on regularity, hill ctimhing, silence, and brake tests. The highest number of points was


 ficoth machime, which wom the I'resident de la Ropubligus piza, and sumbed sseond, Hird and fouth platers in tho


 momers of the pathtimbers are such that there dase mot werm
 are beller roads or pallis.

 ran in France this year for the first time.





 class.

## MOTORCYCLE

## ACCESSORIES \& SUNDRIES



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HORNS

## SPEEDOMETERS

## PUMPS

LAMPS

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## HARLEY-DAVIDSON MOTORCYCLES

## SQUIRES-BINGHAM CO.

SHANGHAI

17a, NANKING ROAD PHONEC. 4770


EXCELSIOR BREAKS AUSTRALIAN TIME.

## Five Hundred Mile Road Record Lowered Six Hours and Thirly Minutes.










 sobenit mea-ions. Describing the trip McMaster said:



 the whole of the trip. Rain would have pulled me up. I



 in led to be pumped other than for the punctures. Ifter




 in the mullle of the rond. The l: xel-nor won: well. I ha:? no mechanical trouble at all.
 to leave for America in September of this year."


 found he lad driven the tires he was then using right off his rims.

## U. S. MOTORCYCLES INTO INDUSTRIAL FIELDS.





 Their serviceability and economy entitle them to world-wide - 1!etention

## BREAKING WORLD'S MOTORCYCLE RECORDS.

Showing Leslie Packhurst, HarleyDavidson speeder, with his riding mate, Fred Ludlow, who recently hung up eight side-car and a string of solo world's records at Daytonia Beach, Florida, U.S.A. Note the new "Bullet" side-car built for speed.

```
~eris
```



## IT CATERS TO MOTORCYCLISTS.

British Firm Finds Business to be Most Successful,
Motor-cyclists in all countries are generally "up aguinst it" when it comes to repairs becanse large garages do not want to "fool" with them. (hina is no different in this than other countries. In view of this the following comment from a British garage owner after a year of catering to motor-cyclists with success, is interesting
"! have found it pays all sound to cater for motor(eyelists only," ho says. "Tho big gumges do not seally want to be bothered about motorecyedes, and of couse car pacticen is entirely different from motor-cycle work. Motor-cyclists are exacting, but becense I know how exacting they are and am as keen its any motor-cyeliat and modestand his !xin! of view I have mede a suceess of the immonation. Wia do mot want motor-eyelists to come to lle with such trille s: soned phegs, and we are willing la show ond astonces lom
 this, the? realize thet lage repurs the what not athempt I





The Motorcycle Section Containing Local and Foreign Notes is Now a Permanent Feature of The Oriental Motor.


WONG AH ZAI
EXPERT
REPAIRING and OVERHAULING
OF NIL MAKES
MOTOR CARS, MOTOR CYCLES

GASOLENE ENGINES

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\(\therefore 1111 . \mid 111\)
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## MURPHY INAUGURATES NEW TRACK.

Lo. Anseles Speedway W'elf Adapted for Recerd Breakers.




























 pivately built and owned plant and said to be one of the
 -. I in the compant ...m! memy of the lemat pmanemt




## GLIDDEN TOUR IS UNCERTAIN.

## No Entries Received Up to Middle of March

Whecther there will bo a (illidden Tour in 1920 is still doubiful owing to the fact that no actual entrics had boen received up to the middle of Tarch

The A.I..i., under whose anderiees if will be remburled bas received assurance fromn several antomotid: monnfarturers that cars will bes contered if the tous is held, bu: 1he reaponse form the ontries sont out sevaral werks Je, has not been of such a charatere as to absislutely insure the holding of the event.
 intracoted in April and upon the feplise will dederming Whether it will be run this yoar. 'Thes esmese, and the time of holding it have not bern sedtext. Howerer, the: Jimesh Highway secms to bee the favoured course, anf Shember the probable time.

## TOO MUCH ADVERTISING.

## U. S. Dealer Gets Fined for His Zeal,

Indications are that speed tests on California highwavs
 with the legal anthertities. In Fobmars it was anmomerod







 highways that the antlonilies asked for and obtuined an understanding with the car deglers that lliey would refrain from such virdations of the higesay lame. Now dast as


















THE WHISKY THAT CAUSES NO EARLY MORNING REGRETS.

0NCE upon a time the idea prevailed that if any kind of Spirit was labelled
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NOT so to-day: An educated taste demands something more convincing than a mere name. The palate must be pleased, and pleased so much that it compels you 'o say "What about the other half?"

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Ius. I'I E.

Jutumotive sumplies Ca


C-utral Comena



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Commercial Transpmetution Ca
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Dunlopp Rubber Co., Ltel.
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Furukawa \& Co., Ltd.

Cimoe I le. F. \& L. As. Corp., Ltd.
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Goodlyenr Tire \& Rubher Co

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## HALL

## BY

## TRICK

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## AN ALL BRITISH OVERLAND.

Speaking at a dinner recently given to the staff by the directors of Willys Crossley Overland, Ltd., Mr. W. M. Letts, managing director of the new company, stated that it is confidently expected that 1920 will see the completion of the first All-British Over. land at the Heaton Chapel factory from materials drawn from within 200 miles of the factory.

Although the home market would absorb the entire output for some time, it is intended to allocate a certain number of cars for export, and eventually to supply from Heaton Chapel not only the demands of all European countries, but also of India and the East.

## THEY'RE SLOW TO BUY 'EM IN HOLLAND.

A peculiar situation exists in Holland. The number of cars compared with the population is extremely small, and the majority of cars in the country are of the expensive type. Indeed, the medium-priced and cheap car is almost non-existent and it remains for some enterprising manufacturers to overcome certain fixed ideas growing out of Dutch consarvatism in order to induce the man of moderate means, who in other countries does not regard a car as a luxury, to buy one. There ought to be a market in Holland for several thousand cheap cars every year. The principal roads are brick-paved and rather hard on some types of cars.

AUSTRALIA WILL BUILD
THE BODIES.
Great progress is being made in Australia in the building of car bodies. The commonwealth authorities impose a duty of $45 \%$ ad valorem on bodies and parts, but of $10 \%$ ad valorem on chassis. There is, of course, a preferential tariff of $10 \%$ in favor of British manufactures. Foothoards, wind. screens, horns, etc., are regarded as parts of tho bonly ; and the chassis is doomed to comprise the mechanism of the velicle, including frame, whools, axles, spmings, stocring sear, engino, transmission gear, tanks for fuol, water, ote overything, in fact, escopl tho hody and tires. As tho engine and eathuretor may bo used for othor pupposes thath for motor ears, they are dutiable for $10{ }^{\circ}$. if imported sepmately.

This combery has over $1 . \mathrm{sin}$ miles of hifhawns which tro suitable for motor trafic.

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| Chevrolet, |
| Cleveland, |
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| Essex, |
| Fiat, |
| Eord, |
| Haynes, |
| Hudson, |
| Hupmobile, |
| Jordan, |
| Liberty Six, |
| Marmon, |
| Madwell, |
| Mercer, |
| Milburn Electrio, |
| Mitchell, |
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C. 1159

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MOTOR CYCLES

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41
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Auto Palace Co.
Central Garage Service Station ......... 2
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#### Abstract

 


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 and Dicompe Contis Case Heat

If the oil is too light it fails to apmate.
 rins-s and the piston if con lieary it is not distributed properly, leavimg eslinter wall and hearingsputly wowel. In either case excess friction follows. Hont mounts up.

The boils and charactor of fiagoske Mubiloil "E:" are such that it will teed realily, distribute thoroughly and form a fotereng film hetmom the wlinder wall.


If the mall ines b:e thethels beal the ford
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 seal the Fonl piston rinss and laep the heat of the erplosi at ans the plitots, where it lindone:

Our fil pase booklet in cribes further
 kmow Ific will ghelly eet it on vour 1...0.eat

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## ORLENTAL

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A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT




## THE NEW CAR

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## MOET ${ }^{2}$ CHANDON

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CARS ON DEMONSTRATION AT THE MAIN TOWN OFFICE.

## THE CENTRAL GARAGE COMPANY

Vol. II.

# THE ORIENTAL MOTOR 

motoring - motor cycling - aviation
A Monthly Magazine devoted to Motor Interests in China and the Far East generally: FIRST NUMBER. APRIL. 1919

Registered at the Chinese Post Office as a Newspaper.

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## DUNLOP

## RUBBER COMPANY, LIMITED

Founders throughout the world of the
Pneumatic Tyre Industry.

[^14]
# TH上 <br> ORIENTAL MOTOR 

A Monthly Magazine devoted to Motor Interests in China and the Far East Generally.

## THE ROAD TO THE HILLS

Shanghai Project One of the Earliest Ventures in China.



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## NEW AIMERICAN SOUTHERN HIGHWAY.

## The Old Spanish Trail Will Connect Los Angeles With Jacksonville, Fla,



China is boing offered innumerable examplos in all parts of the world of highway development, a developmeni which if heeded in this section of the East would maks the Republic one of the world's greatest potential markets for both motor trucks and passenger cars. Sporadic road developments are springing up in various parts of the nation giving an indication that roads are being given some con sideration but what is most needed is a concerted on i centralized movement for good roads on the part of the government, which we may believe, in the absence of any definite announcements, may come as a result of the New Consortium when its final plans are perfected.

Probably no other nation in the world at the present time can offer China better examples of road builling than the United States, for while that nation has had good roads in various sections for many years, it has been within the lasi twenty only that the growing demand for permanent and efficient highways ha; become universal and has resulter! in many vast chains leading from the Atlantic to the Pisefice and from the (ireat Lakes at the north, extending intu Camada, to tho (iulf of Mexico) at the routh. From theso several main artery highways, other state and lox-al highways extend in all diroctions so that within an simet, time it will be possible to reach any soction of the Uniteif Shates by exeellent romatays.

One of the most striking of these developments is the new Amorican highway from Los Angeles, Californis, to Jackemville, florda, which utilizes and derives its mame fom the old spanish tail, larking lowk to the days of the Jomisema Purchasse athed Hoe earlice history of Phorida an 1 ('ablifornia. With it are linkid the mames of men famma
 sumb trails which lack only Hoe dotermimation and Has fimanese to matie them permanent.

Now of the development of the Old spmisl 'Trail. American motor car tourist: maly favel in their own mathomes
from Jacksonville, Fla., to Los Angeles, Cal., 2,900 miles, by the winter of $1920-21$, is the promise of tho efficials of the Old Spanish Trail Association. These officials do not claim that the trail will be hard-surfaced by that time, but that it will be travelable by automobiles from ocean to ocean. It is clamed that no percent of the road hats alreater been completed or financed.

This road extends from Niami, Fla., up the east consi to Jacksonville, thence in a westerly direction throngh Mobile, New Orleans, Houston, San Antonio, El Paso, Phoenix and San Diego to Los Angelas. From New Orleans to E1 Paso it follows to some extent the same routes as that of the Rohert R. Tee Transcontinental Highway From TEL Paso to San Diego it follows the bondertand. Bankhead, and Dixie-Overland highways.

The routc derives it name from the fane then it plesis through many gections of the South which are intimately commeded with the carly Spanish diworertes ant exp litions. Among these may be mentioned Ponce de Luon's diveorey of the ast comet of fleridet whon in sambor of
 diseosery of the Mississippi river in 1.511: alo the 心-
 Rio Grande, and tho discovery by Cabrillo of the lower (allifumber emat in lote.





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 highway.



FIVE PASSENGER SEDAN WEIGHS 900 LBS.

Plywood Body, No Axles And
Other Striking Features In
American Invention.

F


 A. mo time an inventor, who was also in automobile de-
 Luild it motor ciar weighing less than 1 , (000 prounds by use of
 umetai, combining the body and chassis, and with other




Nim comes the announcement that plywood has been used to solve the borly problom and that the now car, a five pmamure sedan model of which will weigh only 900 lbs ., is being brought forward by WT. B. Stout.

 $\therefore$ arment at a meeting of the American Society of Automotive Engineers that it was possible to build a five-patshneve a vloat car of the usual dimensions in a total weight
 antomulite clan to know just what sort of design he had in anind. A few advance details have just been announced of


 build a rommy five-passenger closed car of standard tread



 aninum of buil ling such a car, which he described only as

 nivel







 sprines with the wheels mounted on spindles between. This
 fir thin on :! an! of cheperai in the Whe. it if iss the only




li., ur axle construction showing relutive positions of varions p.urts.

The rear con-lrmetion in similar avept the drive from the differential housing is taken by universal shafts to the wheels. These shafts allow for the vertical movements of the wheels due to spring action. The rear wheel drive


The bonls ot the can is built ope at a the fls simeer of the construction developed on airplanes fuselage principles originated during the war by Mr. Stout, and designed for




1.anking at the fime deagh जle i- remimed of the con--thetion of a -hip-the twa) longitmlinal planks on and corN: mothes the he 1. These phatis torn the surport for
 hulling for the propeller shatt, which is extremely short.

The space within this enclosed body will be sufficiently large to accommodate five persons in comfort, the design having been worked out to give more room than the ordinary car of 110 inches wheelbase, the length called for by thi initial layout.


Sketch of front spring axle construction.
The cross springs which form the metal part of the chassis fasten directly to the wooden frame, which form the frame member as explained in the above sketch. It is understood that one body bas been shipped to one of the well-known American manufacturers, a five passenger sedan iype weighing 196 pounds. The body, closely follows airplane fuselage practice, the particular construction being along the lines of the German Albatross. In that, the sills and frame are combined and the axles are replaced by crosissprings, which fulfill the functions of both springs and axle.


The Parenti Car-plywood body and new frame construction.
The drive to the rear is through propeller shafts with universal joints. Plywood is used practically exclusively in the construction of the car, even the fenders being of this material. Designs are now being laid out for a two-deck automobile bus body enclosed both above and below. This body when completed, will weigh less than the present open bypes of bodies, according to the claims of the designers.

No price has been set, but the car is not intended to be a choap one. It is thought that it will be marked in the medium price class.

## REFINED OILS SITUATION FOR 1919.

## U. S. Bureau Issues Annual Statement of Production and Marketing.

Accompanying are statistics of the petroleum refining industry in the United States, collected and compiled by the Bureau of Mines for the year 1919.

At the end of 1)ecember there were 292 refineries operating, with a daily capacity of $1,356,355$ barrels of crude oil. Comparison with years 1917 and 1918 follows :

|  | Opcrating | Daily Capacity |
| :---: | :---: | :---: |
| 1917 | 245 | $1,157,875 \mathrm{bbl}$. |
| 1918 | 267 | $1,226,175 \quad$, |
| 1919 | 293 | $1,356,355 \quad$, |

I censuss of the petroloum refineries in the United States on Jamayy 1, 1920, gives at total of 373 completed refinceries with a daily capracity of $1,530,565$ baspels, this empared with I Cecombey report shows il refinories with as daily cabacity of 174,210 barels shut down for varions reasons. Ase, Hliss census gives 99 refincrios, daly (appacity of $26: 3,3(0)$ batede in the conse of construction, h; Angust 1, the new refinsties should be exmpleted. Thex leads in mew eomstruction with at total of 50 plamts, daity (apmaty of 141,400 barrets with Oklathomab standing seromel. 17 plants, daly rapaity wa, son lamets.


of Forcign and Domstic Commerce report the import of $52,746,5567$ barrels, making a total of $430,465,567$ barrels, or a daily average of $1,179,358$ barels. which compared wit? daily capacity of the refincries operating at the con of Tocember, 1919, indieates a sumplus (apacity of 17T.01. barrels daily, over the production and importation of crud sil dumg 1919. If all completed and baidding mbertes: shown by the censens of Jamary were oparating in Jugut 7920, the potential suphlus capacit? orer the sapply of petrokemm, would be 614,707 harrels daily


 produced and imported during the yeur 1919, are accounto 1








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## THE WIRELESS

AIR PHONE
IN CHINA.

Possibilities Shown by
Recem Hansley-Passe

## Experiment.





 witeless telephone, combined tromsmitter and wom.a. on

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 ather aircraft and is interchangeable with telegraphic trans-

 -wnamently lyy cables to a small unit which camies all handles necessary for the control of the set. This small




The principle of remote control enables a pilot, while





 of machine. The wireless teleplone was first used on an .




 ignsl has also to be written out before transmitting. This



Mroman Installatia.


Chinese Traffic Policeman, Shanghai International Settlement.


I'hiladephian IIas I'mberellis's amel Mirrors.

In mat watiare the wireless telephone was extremety nsefol in giving instant information to a ship when a sub-
 rase of destroyers eonvoying at mamber of merehont hiph.
 owing fo quick inlormation is to los submarme taking up her position (o) forpeado









TRAFFIC "COPS" HERE AND THERE


Annanites Regulate French. town Traffic, Shanghai


















# AIR HANDICAPS IN CAIRO-CAPE FLIGHT. <br> New Obstacles Revealed in Attempt to Cross African Continent in Planes 

W









 dependability of present day aerial engines and plane


'The Africen tlight ended, wnfortumately, in failure,



 starting point. Another ship of the same make, Hown undel
 half the cross- Dfrican limit, in a difticult trip, made more diticult by leaking water jackets. This plane and engine



Captains Cockerell
 smoraninl in Ih,
flight, who manned
the TIVES machine.

The details last reseived from Lundon record patially






'The "limes" machine, which carried an independent




 difliculty over the route laid out by British diers and en



 1 Sh: usted. The result was the natural one of impairing the
 impossible.





 Kisumu, on Lake Victoria, about half-way to Capetown,

 wailable, reports saying cryptically that "they had been
 Wat heressin! to contimb fomm ther. Wht the wht lak: mints.

Many difficulties already had been surmounted. Sirverl forced landings in the rough country were necessitated, in which the fliers were exposed to fevers, wild animals, and

 heated air and the altitudes caused trouble at num.routimes in getting off the fields and accidents from that cause


From Kisumu they made only the short distance to






Writing in the London "Times" recently, C. Johnson,







It may be that means taken to cool engines in northern climes, or which may be suitable for flying at high altitudes in hot countries, are insufficient for flying with heavy loads at low altitudes under the climatic conditions of the Cairo-Cape route. Cooling an engine when flying low over hot desert sand is a different problem from cooling an engine at $10,000 \mathrm{ft}$."

Mr. Johnsont added that, since the armistice, Rolls-Royce engines have flown more than 134,000 miles without cylinder leakage trouble. He expressed confidence that such difficulties would not occur often.
"The planss, propellers and controls gave no trouble," Doctor Mitchell wrote. "The passengers' aeating, the position of the windows and the accommodations of spare parts ant food supplios require consideration. The morning cold makes a rug for the feet requisite; otherwise extra clothing is unnecessary. The existing arrangements for ventilation are sufficient, even during the groat hoat."

In considering the flight, the varying conditions met with must be considered. Part of the trip was over desert, much of it was above jungles, swamp and brush, and a great part was at high altitudes. Great hoat was encountered and at one time Mitchell declared that certain conditions made large wing surfaces necessary. Much of the flying was close to the ground, power being insufficient to lift the machine through the heated air, and this added to the dangers of enforced landings.

Many details concerning the trip of the Silver Queen II, which was piloted by Lieutenant-Colonel van Ryneveld, a South African, have not been received, the most definite having been a message to the Rollslicyce company saying the crash was due "to taking off with overload at high altitude" of the Bulawayo airdrome. Ryneveld, in his flight from Eugland to Cairo, suffered from storms and gales and his machine was severely battered in the long trip across the Mediterranean, in which his time was only Iwo homs less than that of Alcock and Brown across the Atlantic.

To Cairo van Ryneveld flew in the Silver Queen I. It was crashed, however, at Korosko, just below Assuan, near Cairo. The engines were salvaged, returned to ('airo, and, aftor an overhaul, were placed in tho Silver Queen II, in which the flight was made to Bulawayo. Throughout this trip, the pilot reportcd little engine trouble and, at Bulawayo, slated that he hoped to obtain another plane into which the same powerplant might ho installod for continuing the trip.

The Silver Queen II seems to have had its greatest difficulties Decenne of the altitudes and the hoavy heat. Below Mongallaz, at an allitude of 7,000 to $8,00(\mathrm{ft}$, the phane met inmumerable whirlwind: camsel by the terrife gromed heat. "The mechine was thown about in a most uncomfertathe manner," it was reported. "At Abercorn." ther report continmes, "the highest landing place on the soute, thes Hiems had to dissant everyhing mot absolutely assential in order tar keave thas
 mathers of diflicolly and anxioty:"

Of the other plances that made the att rupt, a Hamd r-rowe was


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## ORIENT A PROMISING MOTOR FIELD.

Ualimited Possibilities Seen by R. L. Johnson, Splitdori Representative.













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Electrical Co.
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 fill the demand. I wombertul banlevand will, in the mest


 and Rangoon, on Febmady 1. Motor car dealers there are

 American care predominate, though more cars of British



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"Overlathed cass are chatly usid in the texi sarvice. There are several big engineering firms in Caleutta with

## THE NEW AMERICAN MINISTER ARRIVES IN CHINA.


fine repair shops equipped with the latest and most modern machinory and tools. It is cstimated that there are 40,000 motor cars in India and this mumber is being rapidy argmented. India has wonderful possibilities for future business in the automotive industry.
"Hongkong, our next stop, was reached March 26th South China at presont offers a very limited foed for arecssarios, there being only a fow hundred cars in the contix ternitery. Regardless of the size of the mated, howerer. tho Sphlidor' 'ompany salizes its responsibility for 1 or user af ite products in the matter of servies athed at pully "pripped servire station with an adepuate sterk of sipate pants has been establistoed here for the coms nience of cusfummes.
"The Philippine Intams is ane of the mest antion fordels of business in the antomotive imdustry in all the Oriont



 capital investad.

It is casy to predict a brilliant future for the antamotion industry in the Far Bast, for comditons as I have olseerved them poind in only ons diredion- Fomatad. This is 1 he more eertain becallse of the interent and attontion that prese tically every mamufather is showing in this marky. Fonh onc is begimning to reatiz that there must be a chase ion operation! !oweon himedf and his dealers and ments, an. $\mathrm{l}_{1}$ mose intimate understandieg on his put of the comblations
 to contime in his present adsamtis.ans prosition in 11.0



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(Continued on Page 54.)

# The Oriental Motor 

Motoring Motor Cycling Aviation<br> and the Far Rast Generally:<br>Fousmbe weal 199<br>

1.ondon Representative Mr. C. Cokayne-Naylor, 30-7-8 Southampton St., Strand, W.C.

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Vol. II
SHANにH.M, JTNE 1920.
No. 3.

## EDITORIAL.

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 the ampl imt that driver of moters were redik:


 to the welfure of the pedestrian. All over the world this
 has been beneficial legislation for the control of the motorist,


Sow that the regulation of traffic has reached such a














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 the moving vehicles. These are simple mules which would lad to incratad safty loth fis the imbividu:l who walli : and the motorists.
 states shew that out of wery one hamdred atedents onls $\therefore$ ven are the lialt of the motiriot. I -imilat example is

 the fatult of the metor (:ar owner or driver. Ill af the atios of the United States are now successfully controlling tho movement of the pedestrian as well as of the motori ${ }^{4}$. with exellent roults and ate leducing moter adeblents "0 a minimum.

It is time then, eince pra-trian rewhotions: are mot

 the individuals who walk to :lmintate "jat walkinge" and reduce accidents to a minimum.

## 

Jost at the pirenent time at mumber of the - the - i: the? International Settlemen! are undergoing spring repairs much
 pedestrian and procrastination and lack of method are extremely obvious.
 vit! of the Foir Eias in its citic me?lloment, (entrol and appearance, and not without grounds for possessing such a pride, but nevertheless the city managemont still clings to many antiquated practices which should have long since feent re vised or abolinhed.

In the matter of repairing the streets, Shanghai can sarceis latic an! prite. While it is the that the majority of
the highways within the city aro in oxcollent condition and traffic regulation is above the average, when a street is once torn up the methods of replacement are deplorable.

Take for an instance the resent reparing of Kiangse and Szechuen Roods, streets which when in their nommal condition are barely wide enowgh to acemmodete traffic snoving in two directions. These streets were torn up by small gangs of from six to ten coolies who worked with the detiberation of a Suprome Court Justice, the streats being blocked so that cne way traffic was cramped and making traffic movements in two directions impossible. Then after several days of tearing up, the replacement began with an even greater slowness, blocking the street for another week. And so it goes.

On the other hand, take the city of Manila. For the lost fiftoen years, the work of repaining the principal strects of the city of Manila has locen done largely at night and hat; Loen no incovenience to traffic for a long period. Largo gangs of workmen are used under a supervision which gets the greatest possible speed out of thom and a night or two nights find the streets again in excellent condition.

Shanghai can tako a lesson from this in the matter of street repairing. The work can be done at night with no inconvenience to the wheel traffic or pedestrianls, large gangs can be employed, greater supervision exercised, and with lese: expenditure.

As a model settlement, Shanghai cannot afford to rely on antiquated methods in her various deprartments of public works and while it may be the line of least resistance to use prosent methods, the directors of the work should mot forget they are working for the betterment of the city.

## SPORADIC DEVELOPMENTS.

T'he days of the debut of the motor car are over in all parts of the world No one has to locenvinced of the powibilitios offered by automotive transportation. either for industrial purposes or for pleasure. The first battlas of the antoriotive industry were fought in the Inited states and in Burope and conquering those fields, the invasion of the remainder of the world beeame casy.

The development of the motor car cal in Chin: is a

 ventere. One day if is in Manchmia, where feneks lame bern bought for the establishoment of a lieight and pascerne service. The next day may be from the komelt, whome a
 pueded from neare the 'Tiketan horder that :h mant is heine subsidized and constructed prios to tho ostablishment of a service of moter faims. And was it mos.




 (ther ofstactes which himder an! whensid. patms.

Xentung low, which is known as the motle aty of Kiangen Provine is futting fonth the mont atrikinge devoloments of roant dare. Lowated six miles from tha Kangtszo Tiver, a med has: lean built frem the river to the city and a motor bom lime is now in operation, the fire of several tracks, with bus bodies, having been delivered reamply. While the city ouls bonsts of aix or saven motor cars at the proant time, (hang Chion and C'hang ('hien, Jr., his son, who aro keders in the development of the city: and of the district, have announced a most ambitious road $\mathrm{r}^{\text {lan }}$, the realization of which will involve the expenditure
 parison with road projects in other countries, still it means much in China. Patriotic ("hinew in all pate of the comenty are plaming roads fow their own home districts, in anme a aes probebly trom a selfish and :..ctional notive, but neverthol.se, tho wats we 1 uidding.

And wo goes on the guradic growth of the rutenotive industry both in the maiter of purchasing of cars and of building roads for their travel. The hope for the future lies in this when the steudily widening circles of sectional and city develymment will meat in what will he a mation-wide highway plan and then China will be one of the higesest, if not the largest, consmers of motor cars, motor trucks and all that go with them in the world.

## THE FTRST CIVILIAN PLANE

Aviation ass a part of the plans of the govirnment of China for commercial and military development has been developing for the past sereal years. The expleitation of the air routes of the country for commercial purposes has also boen the subject of plans and projects for two or thew wers. And now following in the wake of these grow the in the conquest of the air comes the abpearance of the fiest civilian phane, a purely sporting and pleasure aireraft.


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# FRANCE SELLS WAR MOTORS. 

Has Its Own and Many of the U. S. 10 Dispose of.

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 necded, puticluarly the food supplies, and general engineer-


 absorb these big stocks of trucke and touring cars. Finally,
 basis of individual sales, the motor supplies wero includet 11111 • $11.111-1$ ItM1.

The first sules of American Amy tructes took place in




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 the tumover was $f: 2,400,000$ a month, Lieut, Paris disposs 1
 out the whole of France. The French A.S.C., being con.







The situation was agmavated when the American stocks were included. Iong before their army stocks had


 through Tours and along the Marno into Lorraine were left




 have gone into the hands of dealers, small repair men, groups of mochanies who have found a little financial back



 disposed of.
 I'mileaux, St. Niazaire, etc., it has nover been an casy matter.

Continued on Page 64)

# TRUCKING EXCLUSIVELY 

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BRITISH VEHICLE MAKER ON WORLD TOUR.

H Ramond Denais Lnvestigating Mator Conditions in the Orient.

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The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

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## AIR CURRENTS.






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 ato th 11 marked in white chalk letters on a plot of land




 the athen will lathe to ha matk it
 Giarmment that in accordance with tho regulations of the


 one at C'orfu and the other at Brindisi.
 the Pacific coast of the Cnited States, the Goodytar Tir.




 Blimp' ' dirigible.
 Salt 1 abke City, Utah, and Jellowstone National Park in the United states by the Aero Club of Litah. Two planes, tho perpurs of (J) . Noly, w... alrouly araitable.


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 body and the light 900 lb . sedan, which is discussed elsewhere




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It is propenad that the Hamdley- Page air mail servicons
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It is said that Majon R. IV. Silnowder. Ut. S. Amy fli $x$. Who reconty boke the worlds altulule reond, maty nerer tly aysun baymo. of an ardte dlation of the heart resulting from his recent tlight.


## The Goodyear All-Weather Tread is Scientifically Designed

THE big diamond-shaped blocks of Goodyen all-weather tread tires are deep-cut and sharpedged.

They present to the road countless edges and angles always in the direction of skidding. They grasp the road with an irresistible grip that lessens all skidding dangers

Fiven when the center projections are worn downe the blocks along the side provide road traction and prevent side slipping.

Many tires have the projections on the tread so placed that the tixe must hump along from one set to another, thus causing unnecessary vibration.

The diamond-shaped blocks of the Goodyear all weather tread overlap (circmonerentially so that continuous ground contact is presented and the car is saved from vibration and ths tire from needless strain.

These are only a few of the many reatoma uhy forodyear Thess are profored bog discrimmathor motorists the world over.

Goodyen Tires are mude in beth millimeter and inch vises
THE GOODYEAR TIRE \& RUBBER COMPANY GASTON, WILLIAMS \& WIGMORE (F.E.D.), INC.

Wholesale Distributors.


# SOLVING THE CONGESTION PROBLEM. 

Motor Bus Transportation Coming to the Fore in America.




 hmealss of the width of the average native street and in the
 both the problems of tramsportation and the relief of tratic (\%)


Whe ruat , Do Double-Decki Motor Bus.
 experiments with the motor bus. Chicago has just added the dunble-deck mutur bus with an anclosed top deck,



American journals carry lengthy discussions on the


 ill pa-ant transportation since the street car lines are bawoming more and more inadoquate in handling the con-- ". 11....
 limited by the tracks on which they run, it will be impossible for them to keep up with the growing needs of transportation unless new tratks aro laid" tho joumad siys. "This, how-- war is prohibited by the increasing congestion of privately
 on the one hand, demands more public transpentation facili1he The increasing number of privately owned ] ......ns.e

 theo oxpmeat of thomtime?
 utility corprations throughout the country is bound to mean










 formble Heet the titne will come whet trall : will hase in-
 to) lubld it. In thas cont than an! atment would be the
 motor-busses. This for the simple reason that busees neither


 I lewh.

As far as less thickly populated section- are oncermed
 11.an-portation facilities will favor the motor-bus. The lay-
 expense for right of way, bridges, grading, and rails. If



 are pampath due to the ta.t thet the tratumbuls overle ad







(Continued on Page 44.)

are too well known in China to need any special sales argument.

Suffice to say, we now have a complete stock and can fit any size required in either

CORDS OR FABRIC

Clincher or Straight Bead "BEST IN THE LONG RUN"

## FURUKAWA \& Co., Ltd.

1b Jinkee Road, SHANGHAI. Tel. Central 4932. peking, tientsin, hankow, hongkong, dairen.

## 1920

 BUICKSMAGNETO EQUIPPED

5 and 7 Passenger Models

## ARE HERE

# H. S. HONIC 

## "The Pleasures of Summer"



आघमझమ!

ERC \& Co. Inc.
tomobiles in China.

# NOTES FROM HERE AND THERE 








1 if Ilallam．Fiomeral manamer for（hima of the

 has at：in Amemat，he attended the ammal witemen：con－ benlon of the complol！in Roston and fonnd some excop－ Inmall！intomaing development－going on in the labricating ant tield．
（․ ．S．Vandemedl and Company，LAd．，of Seton，Bmy－ land，the well－known electrical engineers，have been granted the warrant of appointment as manufacturers of electrical ＂ynipment for motor cars 10）His Majent！the King，with anherity to the use of the Roval Ams．The warmant，as is rustumary was issmed from the office of the master of the thorse．

The Sutomobile Sesociation and Motor［＇nion of Eng－ land celehrated late in March its first hundred thousiand goal in mombershpy with a huge hanquet，presided over by 1 d． （＇ol．Charles Jarrett，O．B．E．Other speakers included Col． （ribbons，Major Stenson Cooke，the A．A．Secretary and Mr．Wralter Groves．

Bogiming with Jume lat，the Wixo－ung dyer road hata becone a whell road，and lisences are being ionted by the Hupei llooks and Tisa burean．The licences are divided into two das－es：the yerial motor car licence of stion）． entitling the holder to the use of the road for three months， and the temporary or trip licence of $\$ 1$ per trip from Shang－ hai to Wionamg and return．The funds obtained will be hasid to meet the expenses incurred for the repair anc： nokeep of the road．

Wie are trying to keep the streets quieter，said the I ord ifase it the Mansion Honse．Londen，recently in fininy a motor truck driver 20s．for using a device which allowed the exhaust gases from the engine to escape into the at－ mosplete withont firat passing throngh a silencer．In im－ posing a similar penalty on another driver the Lord Mayor said that these fines were a preventive measure，and could h．increatral．

 fond liatatice





 Japath on Ma！29．He लypects th H Mmen w Whe Fiar liat ili H1木 allurn！

11．II：Hamphomf Gemeral manager of bodige and seymour（China）Ltd．，operetors of thia Hudford Garay＂． left fore a lease in the l＇nited states on the Fimpress of

 Shamghai，has been apmented a sub－ayent for Fireston． ＇Tires．Thes will now camy a full line of sizes and are prepared to give regular service．

The following were the current retail prices of motor Guel in England carly in April，No． 1 pettol，3s．$-\frac{1}{2} d$. ：No． 3，3s．6i，d．；and N．B．．．and（ilico bemzole，3s．1d．per gallon in 2 －gallon tins．These price mule all ower limeland and Wiales．In heland and sootland the prices are 1d．per gathon more．In extra charge at the rate of lat．per gatlon may be made for any quantit！lest than 2 gatlons．

II．1）．Hopson，Far bathern service repmesentative of Hee（ieneral Motor：Compans，stiled Jume fi for Hongkong and Manila．Mr．Hopson expecto to be pone for athout four months．He will meet one of the directing oltiecials of his company in India and will acompany him to Chinat

Witer Deceibler ： 31 ，192011，the motor fuel tax in Great Britain will cease，according to the new budget recently in－ troduced by the Chancellor of the Exchequer，and motor （ats will then be taxed $E_{1}$ fer horsefower，with a minimum tax，motorcycles $£ 1.10$ or $£ 3$ according to weight and motor whle side cars $\mathbb{E} 4$ ．

A shipment of Lexington cars are now enroute to a shamghai firm and will soon be added to the motor penmla－ tion if the city

The first Cheveland cars in（hina made their debout at the Shanghai（rarage Co．，Ltd．，during the past week．

Arthur West，former editor of the＂Buick Bulletin，＂ ba－located int shandrai as repremotative of the＂Trans－ Pacific Mayazine＂and the＂Philadelphia Public Ledger＂ Sydnicate．


## AMERICA'S SMARTEST SMALL CAR

Reliable in its
every detail and
attractive in
appearance.


Its recognition as a really fine car has been in-
stantaneous.

We beg to announce the arrival of the famous ESSEX Roadster (2-Seater) and Sedans.

Exquisite panelling of roof, doors, and framework executed in choice woods.


Well proportioned, roomy, with excellent suspension and comfort.

Sole Agents
HUDFORD GARAGE
DODGE \& SEYMOUR (China), LTD.
89-91 Rue Montauban
SHANGHAI
Phone Cert. 323
Phone for a demonstration

## NEW SHANGHAI HOME OF THE TEXAS COMPANY




ALCOHOL AS A MOTOR FUEL.

## Successful Experiment Conducted by British Government.

 the American ('hamber of Commerce in London, the British



Fixtensive new laboratories are being provided with ar
 brines matle in to the possibilities of power alcohol, since it

 of vereetahle substances have already been mode, says the Ameriean (hamber, and it is said to be clear that the penve.
 miling amo of yatrofe

In this eonnection, the interview with I'rof. H. B.





 'the cent it fie mutor users of the Tritish empite will wen



 inquiries into the different values of ordinary alcohol, ether, benzole, and various mixtures of sll three, as a petrol substitute. He believes that the enormous demands of motor transport all over the Empire can be met by taking "sun
 store of old sun products still available. There is no limit to the quantity of excellent motor fuel which can be extracted from fresh vegetation, and can be constantly grown afresh.






 nationnt tur mun.
 fions, and the probability of a new motor fuel being phatwel

 Somrica would be unable to export petrol, as it will be reyinired tor home consumption.



Head Office and Showrooms, Dong Chong Bicycle Co., Nanking Road, Shanghai.
It was taking a long look into the future in 1.894 in Shanghai to have the colange to establish : firm dealivg in inctcles, particularly when there were so fow in the orient and al:o in face of the deep-seated thonsi erroneun: viow held liy Westerners that the Chinese people are the personiñation of conservatism. However, it was with this foresight that D. C. Chu, Senior, now retired, established in the city of Shanghai one of the first bicrele organizations in the rear of $1 \times 94$ under the name of the Dong Cinong: Eicycle Company

Undouktedly his opening met with much unfavourable comment and criticism but nevertheless he continued his work unaffected and the continued success of the Dong Chong Compran and its constant adatation to the developing transportation field in China speak volumes for the phegressiveness and rision of the dater ('hu

In 1910 seeng the coming derelopment of the dicain the Dong Chong company added a ricsha department which hats inces grown inter a lage and ubstantixl busines. for thoroughly did the company organize this department thet "I)ong (hong" ricthas are mow of the highest greve and are considared everywhere the standard of the market. The bictcle and ricsha business of the firm is now one of the largest in the city of Shanghai and the company has branches in Hankow and Nanking.


Dong Chong Service Station, 189-91 Yunnan Road.


The Accessories Shorroom "B," Adjoininy Office and shemroom " $C$ '."

In 1912 , the company turned its attention to the motor transportation field and following in the line most closely associated with their other departments opened a motorcyele and sundries department with the "Endurance" agency. later takine the agency for the well-known bitis: motoreycle the "B.S.A."
still looking forwat to the thend of the monket and of the devejemment of moter thans Lertation, in 1918 r mot as
 (a)s and thuck. The company now has the exchuwive
 Rowding stand:ud motor yole



Onc of the most complete lines of motorcycle and motor car accessoxios to be seen in shanghatis inmied hy that company. In faet, this line has emme to be one of the specialties of the organization and accescrics of wiry well knowa brand are matiod in etock, incolating tires oils. geroline, grases, ete.

The firm is new managud ly 1 ). ('. ('hu, Jumior. who joined his father in 1915, after latuine cempleted his education at St. John's University, Shanghai.
 Bicycle Company has completed plans to build ar large garage and sovice station in shanemat on chat ke them to make of
 ampleted before the erad of the eombine bear.


$\qquad$

# GERIMANS SHOW LITTLE ADVANCE． 

Post－War Models Not Efficient as Heralded．



1：．．．．．．．．．．．．．



1．．．．．．．1．1．i．．．th
． $4 .$.











 in that the colinders are not fitted with detenh ohle heads，

 exhibit any striking traces of refinement．















 fitting of a disuppering type of hood．

## FRENCH BOAT GETS 75 MILES Sunbeam Engine Creates New Water Speed Records．

I maw motor boat built by MI．Iespujols at Paris which

















the＂Tee＂and arranged for gravity feed，whilst the igm．














 and manufacture，a remarkable fact considering that most of the boats are built in France，which may be regarded as －lif honit it mitwil jombustion engines．

## PRICES AND SPECIFICATONS OF AMERICAN PASSENGER CARS



| 4 | 4 | 1．-10 |  | 4.4 | $71 \times$ | $1=$ | F. | $1=$ | $1 .=$ | － 4 \％ |
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| $11-111$ | $\text { i } 1: 1$ | 1 Im | 11 ． | 111 | ．＇4 |  | 11. | 411\％， |  |  |
| $11111: 11$ | $11 \text { is }$ | 1. | 11．neth | 111 | 7 4 | － |  | 11. |  | 41 |
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| $11!, 11$ | $1 i^{1}$ | 1601！ | 1：10\％ | 1 in | 311 ！ | － | 24＂11 | －1；0 | ：2； | ［17！ |
| $151: 11:$ | $\therefore 1=1!+14$ |  |  | 1114 | 12： | い | 1：181 | ［1im |  |  |
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In 1912, the eompany turned its attention to the motor mansportation field and following in tho line most chosely associated with their other departments opened a motoreyele and sundrios deprertment with the "Findurance" ngency later takian the ageney for the well-known Boilis: motoreycle the "B.S.A."

Still looking forward to tho thend of the morket ind of the dovedrpment of moter tamelmpation, in 1918 a met: car dofatment was outalished with the agoney for page (ans and truck 'The company now has the exclusive agencies for the Paige cars and trucks and tho B.S.A. and Ticading Standad motoryche.

Tho I Ong (hong cempany does no lopair work exe"f in the servier of the mathenes whish they settersint.

 company. In fact, this line has ceme to lia ont wh the specialties of the organization and accer-arice of ents? wall known brend abr abriat in etock, including libes, oils. gasoline, greases, etc.

The firm is n . 1 m maned by 1 ). (' ('la, Jumion, whes joined has lather in 1915, Blter having anmplated his education at sta John's I niversily, Shanghai.










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## GERIMANS SHOW LITTLE ADVANCE.

## Post-War Models Not Efficient as Heralded.


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The timing gear <onsists of ordinury toothed wheds, a

















## FRENCH BOAT GETS 75 IMILES

## Sunbeam Engine Creates New Water Speed Records.











 The pistons :ll: of aluminimm, and the overhend valves,

 in whlit fin itio.























# 36\% MORE TRUCK SPEED 91\% MORE PULLING POWER 35\% LESS FUEL 

# -made possible by the <br> FAGEOL COMPOUND SEVEN SPEED TRANSMISSION 

with which all Fageol Trucks are Equipped

Truck operators in China should particularly note the economical Fuel Consumption of Fageol Trucks-a 35\% saving on this item alone.

## Exclusive Agents for China

# FRANCO-ASIATIC TRADING COMPANY <br> 95-97 Rue Montauban <br> SHANGHAI 

## PRICES AND SPECIFICATONS OF AMERICAN PASSENGER CARS







[^16]
## haUl by Truck

# BRITISH MOTOR SPECIFICATIONS AND PRICES. 





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$33 \%$ 510 G00

1. W. Zeyl is a ain ifly 1-senten

1:2 1.p. Cinabuis 3 75 2.5 69 10

INGUS SINDERSON. I evl. 76.12711 .3 h.p. 2 -seater 2- „Coupé 75

1 amter Tomink


| acater Touring..



(i) W. K. 4-col (6if x 100 ) 10.5 h.p. 2-seater

1- seater Touring
Gly. Secyl. T2 $\times 12.520$ h.p. Chassis
5- weater Touring
10 h.p. 2- seater.
II. E. 4-cyl. $75 \times 120$ (1-20 h.p. Chasis
1.seater Touring
H. F. G. 2 -cyl. $85 \times 11010$ h.p. 2 -seater

H1MMON1. 4 - cyl 69 x $1.5011-2.2$ h.p. 2-seater
HAMPTON. 4 -cyl. $63 \times 12010-16$ h.p. Chassis
2 -seater
4 -seater Touring

Speed Model
HORSTMAN. 4-cyl. $65 \times 11010.4$ h.p. 2-seater
4-seater Touring
HUMBER. 4 -cyl. $80 \times 14015.9$ h.p. Chassis ...
5 -seater Touring
4 -cyl. 10 h.p. 23 -seater
KINGSBURY, Jr. 2-cyl. $85 \times 908$-10 h.p. 2 -seater ...
LAGONDA. 4 -cyl. $67 \times 7811$ h.p. 4 -seater Touring .
2 -seater Coupé
LANCHESTER. 6-cyl. $102 \times 12740$ h.p. Chassis ... 1, 4,it)
LANeater Touring 2,290
MARLBOROC(iff. 4-cyl. 64 x 100 10-16 h.p. 2-seater is. 0
MASCOTTE. 4 -cyl. $69 \times 10010$ h.p. Chassis... $\quad 3$-... 41.5
1-seater Touring
MENDIP. 4 -cyl fit $x$ s. $11 \mathrm{~h} . \mathrm{p}$. Chassis ... ... $2 \mathrm{fi}_{7}$
MERCURY. 2 -seater $\cdots \quad \cdots \quad 315$

METEORITE. 4 -cyl. $66 \times 10911.9$ h.p. Chassis … 37 :
2-seater
4 -seater Touring
MORRIS-OXFORD. 4 -cyl. $69 \times 102$ 11-20 b.p. Chassis
4 -seater Touring
NAPIER. 6 -cyl. $102 \times 127$ 40-50 h.p. Chassis...
6 -seater Touring 2,625
NEWEY. 4-cyl. $69 \times 120$ 12-15 h.p. Chassis ... ...
4 -seater Touring
NEIV ORLEANS. 4 -cyl. $76 \times 16520$ h.p. Chassis $\begin{gathered}\text { 4-seater Touring }\end{gathered}$
NEIVTON. 4 -cyl. $69 \times 14012$ h.p. Chassis
4 -seater Touring .
PALLADIUM. 2 -cyl. $89 \times 10710$ h.p. 4 -seater Touring
PARNACOTT. 2-cyl. $98 \times 98$ 12-20 h.p. 2-seater
PHEENIX. 4 -cyl. $69 \times 10011.9$ b.p. Chassis
3 -seater
RICHARDSON. 2 -cyl. $85 \times 858$-10 b.p. 2 -seater
RILEY. 4 -cyl. $65.8 \times 11011 \mathrm{~h} . \mathrm{p}$. Chassis
2 -seater
4 -seater Touring... i,.50
ROLLS-ROYCE. 6 -cyl. $114 \times 12140-50$ b.p. Cbassis... 1,450
Complete 2,500 to 2,640
ROVER. 4 -cyl. $75 \times 13012$ h.p. Chassis
5 -seater Touring
ROVER, Light Model. 2 -cyl. 8 h.p. 2 -seater ..
7.50

230


TALBOT．4－cyl． $101.5 \times 14025$ b．p．Chassis ．．．．．．£1，050
UNIC．4－cyl． 13 h．p．Chassis $\ldots \quad$ 4－seater Louring $\quad 1,330$
VARLEY－WOODS． 4 －cyl． 69 x 120 12－22 h．p．Chassis 638
VAUXHALL．4－cyl． 95 x 14025 b．p．Chassis Touring 800
1.360

1,7 ัก
4－cyl． 30 h．p．Chassis $\quad$－．．seater Touring ．．．．．．1，275
5－seater Touring ．．．．．．． 1.665
VULCAN．4－cyl． $90 \times 13020$ h．p．5－seater Touring ．．． 1,000
4 －cyl． 16 h．p． 5 －seater Touring ．．．．．． 750
WAVERLY．4－cyl． $76 \times 12715$ h．p．Chassis ．．．．．． 475
5 －seater Touring．．． 625
WESTWOOD．4－cyl． $69 \times 12011.9 \mathrm{~h} . \mathrm{p}$ ．Chassis ．．． 500
4－seater Touring．．．625
4－cyl． 10 h．p．Two－seater．．．．．． 500
Three－seater ．．．．．．．．． 585
Coupé ．．．．．．．．．．．． 600
WOLSELEY FIFTEEN．4－cyl． $80 \times 13015 \mathrm{~h} . \mathrm{p}$. Touring 800
WOLSELEY TWENTY
6 －cyl． $20 \mathrm{~h} . \mathrm{p}$ ．Touring de luxe 1,150
Landaulet ．．．．．．．．．．1，400
Coupé $\quad . . . \quad$ ．．．1，450
ZEPHYR． 4 －cyl． $69 \times 13011.9$ h．p．Chassis...$\quad$ ．．． 400
Two－seater ．．． 470
Four－seater $\quad \cdots \quad 500$

## PENNSYLVANIA IMAN VISITS ORIENT．

## Dudley Yard Making an Extensive Business Tour of the Far East．

Dudley Youd，forcign wal manager of the Pennevernin
 （＇up）＂tiks，with headplattors in the Woelwath bldg．，Nu w York City，uont three weckis with the shamothei thod

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1）mille！！laral．F＇orrig！ Sules Manuryer of The I＇emssylownial liubluer C＇o．

B．$\because \because$

 H．，：


Mr．Yied has Fome in the Far Fast for nairly ons year amd hos maste a most intensive study of lles mat．y alt and





 and aubber products，and motored over the countries，studr． in！－wd and athr antlithons．








 （i）：

## DUPONT SUPPORTS GOOD ROADS．








## SLOUGH DEPOT SOLD BY GOVERNMENT．

## Britsh Mitnistry o！Munitions Disposes of Moter Station．



ノ！．．．．．．．．．．．1 Hhe Stungh
1V．．．．r firforl Starage
Yant．I．wh．＂frum th＂
ノ amole finto．




 name as a result，hate been sold for $£ 7,000,(0) 0$ to a private
 won mo．discussion．

Xos comer the balk that the moter track than－partation of Emalame and cooblam anal oflee parts of the Britials
 depot，and－till other remor－hatio it that the plate will be
 いだ
 advices from England，are：For the last two and a half
 Mmill of Whition－and the Treenury which are con－ cerned with disposal of the buildings and plant）and the Disposal Board（which is concerned with the disposal of
 together by Mr．S．A．Wallace（formerly manager of the

 which has furchered the 15,000 vehicles contained in the


Mr．Wiallace has bown for some time managing the （＇ijpenham depot for tho Government，having been lent
 sond durng his tenure of office that he conceived the ideas of forming a company to take over the place as it stood and to membene blo gook tmong combluted the He．Went th the



 ．－．ming thronghout were completed on this basis．The pur－ chase price has been fixed at $£ 7,(0 \mu),(H)$ ，allocated as tiol－






 （1）～～1．
 ；a the pumblase of the Americin whicles wit likily to bes a very sorious competitor，forces have been joined between ＂Iat mas！He dwatimet as Mr．Wallate＇s group and Sir Pareital 1．W．Firy＇s gromp，atad am doubt many of the American vehicles will pass through the Cippenham depot，
 apmations，practically nothing more than an examination ar－light werhanl sill he menesent in their ease．It is ex－
 will occupe from three to five years，and during that perion the manufacture of new vehicles will not be possible．When the time comes for manufacture to be considered，the cir－ damstancoes and malst comblitus will 1 as the deciding Sacturs．hat at prosont it is themeht that commercial vehicles and probably a popular form of motorcar will be the lines ＂1．．n whath mamatatime will he comducter．

 Hont of the works of th：Laniated Equipment Co．，pre－ viously having filled the important position of manager of the Ciencral Electric Co．＇s works in the States．The de－

 Ambitio．in 1！91－at matact was given to proe ed with the
 expended，and it was decided to complete the depot at a （न－ t of a further $£ f^{\prime} 10,0000$ ．Buildings have been erected on

 the－e works may be gathered from the fact that they are caprable of employing from 3,000 to 4,000 men．Despite the fact that one of the excuses for the depot was the housing of the thousamis of cars which had been allowed to rot in Hhe upen at other depots，thousands of motor cars are still standing exposed to the elements at Slough．


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## THE LITTLE THINGS ABOUT YOUR CAR.




l:wh molith on thi- 1 ase will lee pmblinhed little

















 hath meler had. If thi in mot correetiod in time the -hat





 either case the wedge should be bolted through the frame -.) tho1 11 will wamin fimbly in fl. $\cdots$
 (iun. water jacket in place may cause misulignment of the

 limmor and in time the eupporting amm may actually break - Il

## THE R. A. C. FORIMULA FOR HORSEPOWER.








1) formula is quite simple and needs no other ex1.1.1. 4 :



 I'ho wheel is jucked up, and revolved just slightly to dater-



 s equal on all sid.s.





 To a mixture of twenty-four ounces of ether and eighteen
 and hatf an ounce of mastice. 'lhe farts to bee fremed should


If a pound in the engine is regnlar and continomou- it is likely to be trom low mution in the bratiors. If it is jrregnlar and occasiomal it is more likely to he due to prejenition (allsed h! inconnleseent canlon or from improrlat
 fecasiontal missing, especially if the missitm is mom: flequent when the car is runniner than when the engrine is jaling, it is more apt to be due to imperlect elecerical con-- - - umps.

 In removed because the tires are almost sure to get into

 Lollow. The deterioration will be similar to that resulting

 the tank, for kecping out dirt from the cabureter. Owners
 . 111 the big carbureter makers offer these traps, which are to be placed in the lime near the carburater or in the bottonn of the tank. The trap catches all the dirt and water, and


## "This is Studebaker Year"


In the evolution of the automobile, Studebaker has been a leader in all developments for the benefit of the ultimate purchaser. Studebaker was -
-first to make extensive use of pressed steel throughout.
-first to cast six-cylinder motors en bloc.

- first to produce a car with crown mud guards.
-first to produce a six-cylinder car selling for less than $\$ 2,000$.
-first to produce a seven-passenger, four-cylinder, 40 h . p. car selling for less than $\$ 1,000$.
-first to produce a 50 h . p. car selling for less than $\$ 2,000$.
-first to furnish plate-glass windows, nickel-trimmed in the rear of the hood, as standard equipment.
- first to produce a car selling for less than $\$ 2,000$ with cord tires as standard equipment.

Beautiful in design
Thoroughly modern
Mechanically right


## CADILLACING WITH THE PRINCE OF WALES．


$\therefore \therefore 8$

 1．1．．．．．．）th．rinlilli．．It．
 い1 Wしいい！い！
$\because \ddots$,

## HUGE BRITISH AIRCRAFT DEAL．

Ministry of Munitions Eells Surplus to Private Company，

The \manian Clanl ral（ommere in 1．m！a：




 un路




 American Chamber points cut，the new symdicate is to hami

 ceste of storage，ins wance，and other similar wharges．

 that the loritish airecft industry will achieve a prition parallel to that of liritish shiphuilding yards before the war， when they supplisd forcign navies with a large poprom of their most powerful warships and amment．







 company．

## Solving the Congestion Problem． <br> （Ci．ationall fome pear ？

Whon－lus rantion offer mime comentiences that com












 ceny omployees to outlying sections whore sites are obtain－ able is gradually being recognized as the logical solution to小．｜lle： m
 a preumatic tired motor－hus to attend a matinée theater per－
 miles ly train．They left in the morning，arrived in plenty．

 ii．s of the notor－lus make it easy to conceivo the time when


 II．ithon：को


 …1．．．l


## Why Tires Wear Out:-

Two General Causes for Tires Wearing Out Are: First, Friction on the Tread : and Second Fricton within the Canvas. While Tread Wear is the most obvious, Canvas Wear is no less a factor in cutting down the Tire's life. You can observe Tread Wear, and by caring for cuts and keeping wheels in alignment and brakes properly adjusted, can prevent excessive wear. Canvas wear or the Flexing that produces it depends, of course, on the load on the Tire and the air pressure within it.

## UNDER INFLATION IS THE CAUSE OF $90 \%$

## OF ALL TIRE TROUBLES

Remember that your Car Really rides on Air. The Tire Acts simply as a cover to hold this air under Compression. Figure No. I shows a Tire properly Inflated and the correct amount of Flattening to result in easy riding and also long Tire life.


Figure No. 2 Shows a Tire underinflated. This causes an unnatural strain and ultimately leads to Fabric cracks along the sidewalls. A blowout is the natural outcome. All this can be prevented if the Tires are kept propery inflated (o) correct pressures.

## TEST YOUR TIRES CONSISTENTLY IF YOU WOULD RECEIVE THE DIVIDENDS <br> THAT PROPER INFLATION PAYS

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 "IIE I lim 1












A Section of the Shop, on first floor, Shanghai Motor Repair Co.
in the United States, he came to the Far Eust and to Viadivostock. Here, after operating a fcw months, he found business impossible and came to shanghai.

Mr. Dronnikoff is assistod in his work in Shanghai by S. N. Kolichich, an expert mohanicisn, who has had many years of experience in the fiold of the automotive industry.

The Shanghai Motor Repair Compuny spoualizes in rapairing electric starting and lighting systems in which Mr. Dronnikoff has sacialized. It alwo maintains a special magncto testing dgratment.

The seope of the comprany is confinel solely to the work of ropairs, including painting, and repairs to motoreycle and
marine congines. Later it is expected that a full line of accessorics will be added.

A modern Westinghouse battery chargiag plant with a maximum load of sisty batterios, as will be seen fom the accompanying illustration, has been installed.

Since the opening of the company on May lath, an in cressingly good business has been experienot. In addition to his other work, Mr. ] rommikeft is a tembinial writer having written areries of twels: boks in Russian on th: autemobite lusines whith have met with lates shes in the United States.

## TRUCKS HAVE OBSTACLES IN INDIA.

## China Not The Only Country Where Ancient Customs Interfere.

Ihe aly:tates of ancicont aigin confenting the datep. ment of motor therk transpotation develoment in ('inine Which as: now being summented hy the pionsons: in Hais development, such as the whee bamew, the string ant

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 the avelace lodial mextlant and the difli-ults of wore







 the lullow cert. This, the sembem, n ration to …d.













 in Eimune and the Whitad state..

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## ADDITIONAL BENEFITS

Can be included in the Policy by Arrangement.

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## PROMPT AND LIBERAL SETTLEMENT of CALL LAIMS.

1 1 KLNTS

## JARDINE, MATHESON \& Co., Ltd., SHANGHAI,

TIENTSIN, PEKING, HANKOW, TSINGTAO.

ENGLAND HAS RACE EVENT
Brookland Scene of First Post War Speed Meeting.







 . ...!





 Mathe ithe Hillow ont e Mas welt and wruld hate Won







 13. S. Mandsll's Mahis. shomed that the fit-1 colts were sather two hewil! hamduaptad in the -hort detan\%, and - -ullad in a vers of … finioh hatween the Mathin and the II: Whles, the former wirning: atyod of th1.1 m.p.h. Hat the sace ber 10 ?ad tonger, the Wias.aley is uld


 IVaverley won at $61.5 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Capt. Malcolm Campbell, heavily handicapped, put up a very fine show on his Lor-
 not time to eateh up those who started first, arriving home in third place. It was noticeable that the cars with the
 L.- ter cars had started. This did not give these latter much
 in length. This race was very spectacular, nine competitors
 manner. Th, 1.ant infoltan 1Fe of the day, the long E...a Hamläp. Was Hext rum, off, and prowled a ghat deal of excitement. Tient. G. A. Vandervoll-a warm favorite-
 with valve trouble. The majority of the others, with the
 Jowalle. on his ilas rley, was the first away, follown by Copt I (i Mather, on a Cimesles, while Bedt rd, on the Hillman, departeai in a clomid of hons smoke. In the final of the. Gent hamian, Be-kfond had had tronble with his
timing gear, but by dint of stripping his engine in the sheds with feverish haife and making a new pin he managed to get lis car ready, albcit without the front cover of his timing gear. He got away well, and was followed by Capt. Campfell, on his yellow Talbot. Tho Waverley was round before the scratch mari, C'apt. Miller, on the Opel, hat sitwiel, and Mr. H. Barlow's Vauxball retired in the first lap. The race resolved itseit into a tussle between bedfund and ('ampbell, as they orerhauled the field and endeavoured to catch up the leading Waverley.' An exciting finish ensued, the Waverley crossirg the line but two yads ahat of the Hillman, while the Talloot came in a good third. The spect was $50.4 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.

The second heat of this event again showe that the handicap was a little too severe. Mr. Marshall, on his Mathis, was the first away, and maintained his lem throughout, Lord Grimttorp, on his Sunbeam, and Mr. H. O. N. Shaw's Vauxhall (driven by E. Lees) taking second and third places repoctively. The two last-named cars, together with Hawkes, on his Austro-Daimler, had a fine close race, keenly contested and finisbing close together down the straight. The Vauxhall made a very' good race, but naturally had too much leeway to make up.

The final for this long handicap was the most exciting of the day. Mr. L. Beadle's Waverley had its handicap penalized by 10 secs., and so did not compete. This IVaverley cngine, incidentally, is the new 1920 model, and is absolutely standard in all respects. It will be remembered that it did well at the Essex Hill-climb, and evon with its touring body made a good show at Brooklmels. I cord (irimtlerp) retired in the first lap of the race, owing to gerr trouble, while tho Mathis, which had started first, buzzed round the track in finc style, apparently well spring ankl steering perfectly The Vauxhall, heavily handicapped, :gain showed its speed. Capt. Camploll, on the Talloot, cuidently had lefe a little in hand in the last race, for he canght up the itillman, passed the fiedd, and wrenched a victory from the Mathis, passing the finishing line wherily waving his ams. Jlis speed was st.5. Socond and thirel places wore secured by Mr. B. (A. Marshall (Mathis) :Hod Mr. G. Bedford (Hillman).
 ('ummuings, on Mr. Barlow's Valuxhall, and Mr. II. I). Hankes on his Austro-1) ambler. Path of these (ans Wome











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 sta:fi of Franch policemen, controllcd the traftic with clock-









 their tratice during the war mado a tremendous impression
 Silw how well it worked out. Where the other armies wero reporatedly running into jams and tyups, the American S. O. S. functioned with a great deal less confusion, due to

 from their civil lives learned traffic regulation such as was H,w...1! in handling the tremendous column of traffic over 'In I....l- ination the lines.







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construction of this motor car are made by the factory which is a rare recommendation in present day motor industry and and one not to be overlooked. Every part of the NASH is built not only to perform well in its own particular function but to harmonize perfectly with every other part of the car. You may have an option on a NASH now-the first shipment will arrive soon.

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Develament of the mbloge industry in the istand of Hainan, off the south cemst of Chine-the first developencht of this sort in Chimeso teritory-promises to be a motal) succes, although so far the fimancial rotume for the induster have not been remmative For two yean now, during 1918 and 1919, tho shipmentis of sullar in inderisal ymanities have been made from Kiundow for sistapore and Honghong, and it has boen demonslatal that the frees can








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 the impertant items of the export trade of simblathat

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 al : ilt it.














 (…n chemist accidentally discovered that aubber combin? 1



 canization" or "curing." From that time on the growth in











 : wor. nno thought that latex was the sap of the tree it. If
 suthing on to wilt tl. -al ol the tre.


 soprate the gron from the foreion sulustances by the use


 Proiner on the atro. This proces. was repeated over an oren until a "hascuit" or "ham" comsenicat for haudlis,

## BRISCOE 5-Seater Cars TIs. 1,100

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resulted. The smoke had propertion which curod and presorved the rubber. These "biscuits" or "hams" were then gathered by the tradors and shipped away to be made up into rubber goods in the factorios of the wortd. In the Congo the natives let the latex mon onto the ground where it was coagulated by the action of the sun. In some placest it was the custom of tho natives to smear the latex on their bodies and coagulation was accomplishod by tho hoat of the body.

With the advent of thio motor can and the subber tir tho sitpply of wild rubber became inadeybats and mbler plantetion" begh to como into exitumo. It was found that
 there exists an enomous acreage of artificial phantmes
 Young plants are raised foon seod and tranglanted but ox (asiamally the direct phanting of seod is rewated to. 'Trane
 for many yours.








tion rubber comes in thin stamped shect: and gencrally hers the name of the plantation. It is wesy to hende and inswert

Thm center of the cultixated rublurymp is singepore Streits Settlements, the logial headpuerters for the bast
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Rocognizing the :agnificance of this dex dopen ont in tho


 made plathe for the consthe lion of a millich deliar ! ! Int or



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## U. S. CAR PRICES CONTINUE ADVANCE.

## More Makers Boost Tariff Due to Costs.

That those automobile makers who have not ahoady arased their prices will be obliged to do so in the new fulure sems to be a forgone melusisur, aronaing to bow, Jon: \& Co. commercial nows gatherers of Now York. 'The laterst advances are shown in the Motor ('an P'rices and Specification tables phblished elsewhere in this issmo of TIIE ORIENT', II, Motodi. Compariwn mey be mode by reforing to previones jesues.

Not only ase some of the rew materials which conter into the manufacture of motor cars extromely difficult to procure but their cost ase adily incerasines. Rome of the smaller independent stecl comperniese could dispeste of their
 maintaining a policy of making allorments for rownlar
 stow complatios bot wotking ond : batis atre merivines


 in ambomblate time prices is amollore item which mems:


 for tho larger sizes.

MICHELIN HEADS FRENCH AERO CLUB.
Tire King Long A Devote of the Flying Game.
Andre Michelin the tiar king of Fitanere, has been
 lat: Hemi boutsch de la Manthe








 miles an home, alld li:nd in an :area of is !and.






 linited slates.

HONIGSBERG OPENS NORTHERN BRANCH.
Peking Station Will be in Charge of H. L. Rlcks






 phant now operated by the company in shanghi. The open-
 lun _. Un u ging director of the organization, who has been maheme the: :

 is being installed. The station will be equipped to give tire,









 Shanghai phant.












## U. S. PROTESTS AGAINST MONGOLIAN TAX.

General Hsu's Levy Against Noto:s Meets with Disapproval.









## "Once A Customer-Always A Customer" is our motto

All kinds of Motor Cars, Motorcycles and Marine Engines Repaired. Satisfaction Guaranteed.

## Highest Grade Work Only. Prompt Service.

 SHANGHAI MOTOR REPAIR Co.11 Boone Road
Corner of Seward Road.

Refined Oils Situation For 1919. (Continued from Page 9)
arnde wore run by the refinmies, who in addition Hswl $1,446,326$ harred of Mexican tope
(amotine proxuction incrensed 10 proment ont that of 1918, ()eteber being the high month in froduciton ant Jamuary the kow month. Stocks indieste the se:sworat demand for this product; the largest stockis were on hame at




 gallons.




 fionn is thigh paint in (belahor 1917, to the low - 1 - 1 I 1.1





 gatlons.



















 (111).

## WICHITA 3 TON TRUCKS



## Wichita Worm-Drive Construction

exerts more pull and delivers $97 \%$ of the horse power to the re: whects
The tecth of the worm and the worm-gear are always in mesh, permitting the maximum delivery of power.
In CHiVA and fl wher mannion meter ar many conditions of climate and travel, WICHITA is giving dependable serviceand it is latals due on hit whime construction of final drive.


## SHANGHAI HORSE BAZAAR

and
MOTOR COMPANY, LTD.
Tel. W. 1641.
36 Bubbling Well Rd.

## 220,000 CHEVROLETS THIS YEAR.

Many Changes Have Been Made in the 1920 Models.










 (15) - lightly higher price.







 tool box. Adjustable head lamps are providel, which permit


The chatch, latake and gear comtole ar momenimi: placed and simple to operate. A lighting and ignitior.



Is tie (lievrolet was built from the fust with full



 pearance of the car and add to the comfort of the passenger:.

 of the: - t is neariy wiec at wi.le an the uther, formatig b lan to which the other plates can be clipped. These gring- rempire no hatrication lagond that of greating es


The fenders have been rounded to more closely follow
 of D'antesote of Khaki ns: hate phage ghas windows in the



 inches ( 133.4 mm ) ; springe, front, scmi-elliptic and rear, -rmitamtitero. The tires on this model are also larger than thes on the "190" and the sterring wheel is of threa inches greater diameter.

## Our New and Modern Vulcanizing Plant



## Let us estimate on your Tire Repairs.

THE SHANGHAI GARAGECO., LTD.<br>THE STAR GARAGE<br>125, BUBBLING WELL IIOAD. PHONE W. 197-131.<br>operating - THE EASTERN GARAGE<br>SHANGHAI<br><br>'1PHONE C. 1158-1159

## CANADIANS MUST GUARANTEE CARS.

Agitation was begun some time ago in Regina Saskatchewan, by an owner of a one time popular lami of (as whose manufacturers had stopped production on it to build another type. This owner claimed he could not obtain spare parts anywhere in the Province and that the company was not interested in giving service on old cars. This led to a new law for antomobile venders in Sablatelus wan. They are compolled to givo tho purchasers of are guarantees that all neessary parts exem those which can bo mado by a cappenter or blackemith will be kept at : spacified place in tho Provine for a $p$ ariod of ton yens: from the data of sale of the car. 'They are oldiged to file with the provinetal secestary al list of repairs shawimg pria on behmary lat of cach your.

THE FORD HAS A SPANISH FACTORY.


 instatled at Ceindi\%.

DOES THIS LOOK LIKE A FORD?





PNEUMATICS FOR TRUCKS BY LAW.











## WINDSOR GLASSES IN TORICS <br> AMBERS <br> AND SMOKES <br>  MOTOR GOGGLES \& SUN GLASSES PLAIN OR ON PRESCRIPTION <br> KRYPTOKS \& CROOKES LENSES HIGH GRADE PRESCRIPTION WORK <br> THE NATIONAL. OPTICAL CO.

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Phone C. 1242
Shanghai.


IT is mare protitule wimbur your car BEEORE:
a smash than afterwards. You have bought the most suitable (ar for smit parpose mow takc out the most sulable palley themeter that car.

The "YANGTSZE" Policy offers the
fullest possible protection and is the

$\qquad$
RING UP THE

## YANGTSZE

INSURANCE ASSOCIATION, LTD.
(Shanghai Central 5475) and ask for a prospectus.

## EVEN A BOBBY MIGHT WONDER ABOUT THIS.






MILBURN HAS NEW FEATURES.
Simple Construction and Operation Characterize Late Mosels.


















 everday trips it answers the putlic requirements to per-
 irge radius of 60 to 90 miles.

Millourn Tight Electries are termed by their dealers and



## FRENCH AIRPLANE PRODUCTION.


 imately 11,000 planes during 1120.


## BELGIUIM INTO SPEED EVENTS.

D'Aoust Prepares to Push Country Forward.
The red, yollow and hack flag of l马animm will jammily aseond the mest when stavers roll to the dape on the mext bo-
 Bhessels wathy belgian ponteman, culminate in slace.
 broken b fill was of viokemer and dewnetion :mald ha-






 through ugen their completion.

## DODGE IMAKES NEW RECORD.

Trip Made from Urga to Kalgan in Two and One Half-Days.











 (llill:1)

## MOTOR CAR INSURANCE

REDUCED RATES<br>SPECIAL CONDITIONS

## GENERAL

ACCIDENT, FIRE AND LIFE

## ASSURANCE CORPORATION, LIMITED.

For prospcitus apply to the
FAR EASTERN MANAGER,
4 A PEKING ROAD, SHANGHAI.
or WHEELOCK \& Co., French Bund.

## CHALMERS HIGHER PRICE.

Responds to General Rise in Materials and Labor Costs













## KEYSTONE TO GO TO SINGAPORE.

Will Build Million Dollar Conditioning Plant.



 -. ithmons: pantoman and will comperes it make


LONDON-PARIS AIR SERVICE MAY STOP.

British Government Refuses Support Saying Civil Flying Must Fly Itself.









Thas anmous.


 は $W$ W at stake.
 due othe thins- that :aplams.and that the production


 isondon amd Paris is now in danfer of oollapsing as a result If the Fi, lies of the (icerommernt


 (ons:mber it for a late propertion of the machines us. d duringe 11. "Ir

The United Statos Flying Copps also adoy ted them, and dhes ane dew wed in the air matil services in America which,
 pounds of mzils during the year ending June last.
 me nt Il tha hins would be sutficient to main, in the terknimal saffe and weuld sallewnad the finture of Briti:ls machines.

Ther American (eovemment is extablishing air mails

 firm 1 .amben 10 Paris. Thas erat danger is that the L on-don-I'aris route will be entirely maintained by French mathitus and ! ilot:

British puldic opision hats been arou-ed to such an
 lack of funds with which to build experimental machines, and what thic i- hikely to mentorn hation that the (ionwhach hase lowane thombhly alamed, and have huriedIy resuscitated the committee which formerly met to discuss what assistance, if any, should be givon to civii avaition.

The Imeti an Chanter i- of the: opinion that having weared to the mathonal interists involved. 'He committee will recommend that a laree portion, if mot ali, of the continental mails be carried by air from Iondon.

JAPANESE ART IN 1930.


A motor enthusiasts impression of the days when the motor "scooter" replaces the ricksha.

## ILLINOIS GOES FOR TRUCKS.

## Governor Proclaims Week for Propaganda Purposes.

Signifying his whole-hean ted approval of the idea behind a ship-by-truck werk, (iovernor Frank O. Towden of Tllinois has co-operated with the leaders of the movement and issued a proclamation calling on the people of his state to olserve the week of May $17-22$ as Ship-l.y-Truck-(ivod Roads Week. Such coroperation as Governor Lowden offers helps matorially to focus public attention on the necessity for good roads, and the practicability of the truck as a short-haml medium, as has been shown in a number of similar instances.
"The transportation system of the Country," says Governor Lowden, "will not be complete until our highways aro improved so as to permit the use of both passonger cars and trucks throng! out the entire year. The State of Illimois is making a most detemined offort in the face of great odds brought about by existing conditions to complets, at the rarliest passible moment, such a system of highways reaching every sertion of the state."

Ioming out the advantagos to be derived from the nes of highway cransportation ann showing a realization of the many ecomomies to be effered by the use of the motor truelk, the (iovernor in his proclantation contimes
'In harmon! with the action of other Mtates. I :'m asking all cilizens of lllimois interested in transpartalion to givo sapectad thomght and attention during the wew mot on! for fanspentation liy way of motor track, but alsen for the oromosical development of such it highwily sistem :1s will
 mesthed of delivering the prodects of our firms athed luctorics."


## The 6-42 GLENBROOK

IN this new model five passenger light six. Paige engineers have developed a car that combines style, riding comfort and mechanical excellence heretofore found only in cars priced much higher.

The Glenbrook is powered with the new Paige light six motor, designed by Paige engineers and built in the Paige factory: This is the motor you have heard so much about. The new motor is truly a remarkable power unit.

In brief, the Glenbrook offers wery adrantage of the high priced high pownow touring car and none of the disadsamtages.

The Glenbrook Modid is Now in Stock.

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OUR POLICY COVERS EVERYTHING THAT CAN POSSIBLY HAPPEN TO A CAR

COVERS LIABILITY TO THE THIRD PARTY

BEFORE INSURING YOUR CAR GET OUR RATES

PROMPT SETTLEMENT OF ALL CLAIMS

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J．BEUDIN \＆M．SPEELMAN
Telephone C． 1938.

Agencies：

PIKING：：Mertion 10：is


## BUYERS＇REFERENCE GUIDE－PAGE 80

France Sells War Motors．


































 bered that before the war American trucks were unknown in France；and，with the exception of Fords，practically $n$ ，
 sisted for the supply of spare parts，or for＂service＂in




 The Fond pegto，hamp andian－to pum lase thim．Fant an






 French have had neither time nor the staffs capable of doing than swork．The t．－nht is that in cent in cateo the Di－porats

## MOTORS MAKE DUTCH STREET CARS MORE POPULAR.



The city of Apeldoonr, Holland, has "rigged up" motor cars with wheels and other accessories for hauling street cars, singly or in train:s and has made the transition safely from horse to motor power. The cars are said to be much more popular.

Board has acket the representatives of Amsrican compani to make bids for their particular spare parts, and, on the offer being accepted in principle, have had to admit that they did not know the nature, the quantitios, or the values of the parts in their possesssion.

The Packard representative in France, in view of the impossibility of geiting proper inventories, declinct it handle any of the Army stocks of parts. The Piorce-Arrow Company, on the other hand, has sorved an injunction on the French (toverument because of its rofusal to sell PieceArrew furts to them, in aceordanee with their contract. I lad lieen agred that the firm should have tho rigit 10 , purdrase stoks altor the war, but the French (ioverment clams that this does not apply to the Amoimen steks, a! of whis have lieen kopt undor lock and ke ! although mot af the trueks have been sold.

The tromendous inceate in the mumber of motor tration in Pance, compared with tho prown prind, is dratous
 statiettess of metore bucks in France, bint smo indiantion of the mumber may be obtaind from How fard thot, of t! :


 intensifly the use of trucks. The only method of waturn:-

 ion between all the big centors and partionlarly 1-4 wen


 $y$ there is need for an fige line.


PENSION SEASIDE
Nicely Furnished Rooms With Bath
For full particulars kindly apply to
Joseph Th. Monchen, prop.

## HAUL

 BY TRUCK
## Oxy-Acetylene Welding SERVICE Why? <br> Because

1. Insures against long Shutdowns.
2. Saves the Pieces, Welds all Metals any size, shape or weight.
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## CHINA OXY-ACETYLENE WELDING WORKS <br> SHANGHAI

Orfice phone C. $1982 . \quad 1$ Y̌uen Ming Y wen Rod.


1 ml..lli.li..l will a lin!! tall aml a pelper maike hurat is had the illustrated Gi, rlimel | lid rirrmas atunts al "r ronell. s. Mmere shem li!! runmul!! "rumblal "tilly mlıas " lover and mulioiny lle. . Mhte. "f fiet jumpl. witr
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> of the emblentiers.

Warnings Regarding Gasoline Supply Brings Increased Interest.



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 othe - if the supply and that something must be fommed to




















 Hok King's Tyrnn, in owner of propert! in Norfolk, invited






 minci, whenever the opportunity arrived, to make borings

 wy golougical diata were cither obscure or absent altogether.

 141:11. Ine dre is puldie attemtion t., the pressibilities of oil

 Ther is lh hame of atpisit! in its lathoratories. where men



 16. , $1 / 11-1$ of the work at Setchey

 mellod the c.al fratum, and a scomed shaft is being



 and 6,100 men, representing a population of 20,000 persons,
 wh conlent on cakll ion wh shate is forty gallons, the reljef to the notor industry will be warmly welcomed.

About 1,500 tons of the shale, when the soam is onened out fully at Sctchey, will be carried to the retorts daily by aerial ropeways. Cement works, capable of dealing with about 600 tons daily, are about to be constructed, and brickyards, which will furnish about 100,000 bricks daily, aro to be established: According to Dr. Forbes-Lieslie, the shale deposits do not extend far to tho westward, and theii eastward limits are difficult to determine laceme of the chalks, which become very thick in this diroction. In the opinion of geologiste, the shale basin does not extend very far under the chalks, but this point will shostly bo determined, as the Government has givon powers to the company to drill for oil oner ahout therefourths of the cound y Noufolk, namely, from Wells $t_{0}$ the Little Ouse, along this river to the Nens, then along ihe Nene to its mouth, and thence to Wells along thr const Drills capable of going down 4,500 fect will be usad, s. that when the compaely's invastigations are cumpletal, dil the geolngical information required will be available.

## FORDS GAIN IN INDIA.

Market of Canadian Company Trebles in Seven Months.
Ford Motor Co. of Conada in the last seren montlas has shipped close to 5,000 cars to India, more than treble the number shipped in the year ending August 31, 1919 Rough traveling in India is refleeted in the frement res newals of parts orders. One ords reected in h, in at th: factory in Windsor callod for many thousud dall wa wort
 ship.

All of the Fond cars shipped Indi:s are buil in the C'anedian plant at Windser, this pont :mplsin: 以



 of lack of production and farilition low was am:

## MOTOR SCOOTERS ARE SCARCE.

Only One Maker in the United States-That lo: Export.



 states.




 one vehicte for home consumplinn.


## HIRE SERVICE ONLY

 ALL NEW HUPPS Shanghal's newest garageCatering to that Class of Trade that Desires the Best.

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For every malse of car are obtainable from the

## Briliant Elestric Company．


 Prone Gentral ：007


JUST ARRIVED

## MOTOR SPEC＂TACLIES

SHOOTING．AVIATION AND SUN GLASSES问公鏡眼華事小海上
SHANGHAI OPTICAL Co．

P393 NANKING ROAD

PHONE C． 1084
Every issue of THE ORIENTAL
MOTOR contains a Buyer＇s Index to advertised goods．This is for your convenience． See Page 80.

A PIONEER CHINESE AIRMAN．


Arthur Leyn of rockilend， 1．．．．．क．
 twe．the Jir．t memlur of hif 1．．：ha dimenstrit． al allilu．．．bigi．r．

－！！icial．

## AUSTIN GOES TU MASS PRODUCTION．

Eritish Maker to Increase Factory Output．











STULEBAKER SETS 1320 SALES GOAL．





 later．（ireatly imoraad froduction and great or sales for


 ＊larte． at the south liond llant fles sprimg．Thee a hedule
 of which，according to the report，are alroady under order．

## COTTON FOR TIRES AT TOP PRICE．






 tatore the conambicemeth of the mambacturing process．


U．S．CAR EXPORT GAIN．

Far East One Region of Greatest Advance in Distribution




peremt in turk shipments onew the xat 191 － 1 and


 Comberce of the 1 mitad state．






## Tぃいい。

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## CROSSLEY SHOW'S NEW MODEL WITH MOST MODERN LINES.



 on the road recently at the opening

 is attructing mulh fiulural, com.
ment in I:nylumil.

# INDIANAPOLIS EVENT LOOMS UP BIG. 

International Speeders Meeting Will Have Entries

BULLETIN
Chevrolet elriving a Dusenberg uon Indiumapolis Memorial Day Meeting.



 "....". cen race meeting at Indiamapolis, Indiana, U. S. A.,





 ane future dat



 teeult: will bex riven in the July number, aloneg with some photogiaphs of the events, the winners, and the erowd.

The princopai American drivers, including Tomm! Dillon, holler of many of the world's speed recerds, were

 of April








 formance being a second at Chicago. Jack Scales i., an
 frist racing team. He was picked to drive a Fiat at Indian.11 lis in 1!915. Wh: 11 the witr (ablised this race to he callad witl. This is lis fis-1 alleamalne in Ameria.
 trobmedele laten amt holds worldis record. in the latter. ? Y F F




In all prubability the Ballot racing team will sail from



 theve will provile the winner, but M. Ballot is certain that tine will make a senvational performance. The Ballot 183



I $: 11$ - 11111.11 in 1 , the effert that Fiat is: working day and night on three racing cars. At the present moment It is liat afmolnt I? ant ant that thene can be ready on time. Fiat hat -bllen ont cmtire! new designs, with engines re-

## THE TASHEE <br> CIGARETTE <br> WILL BE A PLEASANT COMPANION TO YOU WHETHER YOU ARE TRAVELLING <br> IN THE AIR <br> OR ON THE ROAD. <br> AGENTS:- <br> SINCERE Co., WING ON Co., <br> M. Y. SAN \& Co., AND ALL LEADING TOBACCONISTS. <br> The Nanyang Brothers Tobacco Co., Ltd. SHANGHAI.



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GASOLENE ENGINES
S11.1.1611.11
P.512 N. HONAN ROAD

Phome $N$ sts.

## CIVILIANS ARE. BUYING PLANL:S,



 f14. montl.

## IN THE FIELD OF AUTOMOTIVE ACCESSORIES.








[^18]


The nerw seisser shock alsorber, the reducing clement consistiny of an overrumming clutche




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Thi Bulcrant: stubilizer.
Mburnte i. is "t atroting
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....i i M. ..... I. I. I. 1.1.


The firent inherib ina when.
ment anil docs away with the characteristic wabling motion of light


(i..) Cimcinnuli, Uhio.

## -And When It Comes to Motorcycles

just come to us
The Excelsior is the triumph of simplicity and staunch construction.
EXCELSIOR MOTOR - twin cylinder, ${ }^{5}$ bore 3,21/64 inches, stroke, $3.1 / 2$ inches. While these motors are within the 61 cubic inches displacement, they develop from 15 to 20 horse power by dynamometer test and as proven by our world's record, a mile in 36 seconds, the first motor to make 100 miles per hour.

EXCELSIOR CARBURETOR-Improved Excelsior Schebler Model "H" with auxilliary air valve and choking device for easy starting,

The above are just two reasons why you should secure an Excelsior.

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Arrange for a demonstration, without any obligation on your part, with the

AMERICAN TRADING COMPANY, 53, Szechuen Road, Shanghai.

## Exclusive Distributors for China.



PARIS-NICE RESULTS ANNULLED.
French Refuse to Accept Them as Official.

Quite a sensation has been cansed in Premeh mot or code circles, by the decision of the Uniom Matoectists de Framee to refuse to accept the results of the l'aris- Nice Trints. Is
 and any advertising whict: may be dome in commection will it will be comsidered as ompty, anl will whme thas responsible for it to the penalties pronided for mator the Jnternational whes

























THE SUNDAY ORGAN

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ONLY SIX DOLLARS A YEAR.


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SHANGHAI

17a. NANKING ROAD PHONEC. 4770

MOTOR VEHICLES IN SOUTH AFRICA.
Cycles Are Playing an Important Part. According to Statistics.

 thore has just been publishod the first quarterly abstract by








 the I mion. Waking the thal mumber of motom ownere in









 t:- of the m:otor driven bike.
 pwer and distril:ution of these vehicles among the various provinces. Whas, in the C'ape province, 6,585 privat cars. 2,122 commercial vehicles, and 4,152 motor cycles have been 11:-1-1.1 1: in H1, Thanswatal there are 3.941 private cars,
 1,762 private cars, 1,142 commercial vehiclos, and 1,742 :norr cycles : in the Free State 47.2 private cars, four commerciel vehicles, and 273 motor cycles.

Forn theor tiguren it will be esen that the (ape is far
 motor traction, and the Free State farthest lehind, both in ?- pect of pheasure and commercial vehicles.




 drawn between private and commercial us:

TWENTY.THOUSAND MACHINES FOR 1920.
Militor Factory ${ }^{〔}$ Announces New Production Goal.
 to manufacture 2n, 000 Militor motoreceles at the old Knos
 anordine to a recout ambunctwent.

## THE 1920 HENDERSON 4 CYLINDER HAS ARRIVED



THIS 1920 MODEL IS THE PRODUCT OF EIGHT YEARS OF UNINTERRUPTED DEVELOPMENT OF FOUR-CYLINDER DESIGN

3-SPEED
12 1 HORSE-POWER
LOW CENTER OF GRAVITY
THE CENTRAL GARAGE COMIANY
2A, JINKEE ROAD
Exclusive Agents
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NEW DRIVE FOR MOTORCYCLES.

British Inventor Perfects Chain System for Bikes.

A now chain drive for motoreycles which has bem fur fected by W. Miller, in English inventor, is attracting much attention in the cycling circles in Groat Britain and is said to have proven exceptionally successtul.
 chain of the 1 sual kind having dips plated :at sin. moll along the ebain and shaped eo that doey erip the whl ow an ordinary $V$ belt. In operation Hw dain pa......... . sprocket mounted on the engine or countershatl, as It ....
 belt securely fixed to the rime of tho won wh I Tha payd
 road whent.

## B. S. A.



+ II. I'. MODIVI, " 11 ." Single Cylinder 3-Speed Kick Starter THIS MODEL IN STOCK

Agents for Shanghai
DONG CHONG BICYCLE COMPANY.









# EIGHTEENS" NOW COMING IN 

## Engines and Magneton Show Trend for Increase in Cylinders.







 motor thansurtation.
 cylinder magneto from the linitod States and the (ind 1 1-" "tatue and is ation meme from Emplatal. both of which are illustrated.



 fin © how of the head compxed with the lower part, alsis as le-






Not recommended as an accessory the dealer might sell, but as an interesting bit of development in the ignition field, the Splitdorf magneto shown herewith, for eighteen-cylinder the splitdorf magneto shown herewith, for eighteen-cylinder
whim - for aiplame - produces something like 333 sparks a

 the weight of the engine, because three magnetos were nomary

With this magneto anmething like fiof ith in weight 1. aved, and if two magnetos aro used to give separate and

 magneto is driven one and one-half times crankshaft si". !
 up to standard and has attracted much favorable comment.
 "twelve" models of the Green Co., execpting in the number



 are of $\cdots,-1$ teel, the jackets of blocked sheet copper, fashion-


 2. aced, and if tro magnetos aro used to give sepmrate and
. en type of this engine for cooling the exhaust. The exhaust manifolds (one for each block of crlinders) are of special
 the -..on of "dumbuin." and there -erions fatults, developed by the ennular exhaust manifolds used in the early stages al the war. I atction illuatations would bee necessary to explain the details of this itcm, though it should bo added floif the andtruction i- nat complic ital, and that each maniWhit ha- a "an ! " "and which "blows" at a pressure of 3416. 10 141b. stean.

## BUICK TO HAVE NEW PLANT.

## Seven Million Dollar Structures are Planned.

Immediately following the annual meeting of the directors of the Buick Motor Co. plans were announced for the erection of new factory buildings and extension to the Buick plant located here. The new structures will cost approximately $\$ 7,500,000$. When these buildings are completed the factory will be capable of turning out 750 finished cars per day.

The company also plans to spend three million on building an assembling plant in St. Louis, where in addition to assembling 200 cars a day, equipment will be installed to permit the turning out of 200 complete and finished bodies each day.
H. H. Basset was elected president and general manager to succeed Walter P. Chrysler who resigned.

## AUSTRALIA SEEKS OIL.

Government Offers Bonus to Discoverer of Deposits.
The Australian Commonwealth (iovermmont has offered a bonus of $£ 10,000$ to the disecter of oil deposits in An stralia. Many clues hav bech followed up, but the results have bean morely of an oncorraging nature : consequents they have not been accepted as positive proof of the non. existence of petroleum deposits. Ten times the sum offered for the discovery in Australia hais 1, en spent in Papuat Xou (eminear in exprimental borings in teriton! known to be

 British and Commonwealth Governments

## 'SNO USE, M'FRIEND!

 bringing ont." sald the esaller, "ral leallar

tomght a Jordan silimonerl.













 drive.

## Whisky

## J. \& G. STEWART'S

## "Gold Medal"

The Drink for Connoisseurs.

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 L-16月.

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## IIALI

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## thick

## BOVCE MOTO-METER

 All Models in Stock YOUR CAR NEEDS ONE DONG CHONG BICYCLE COP. 346, Nanking Road, Shanghai


THE HORSE LOSING OUT
If a Bill now before the city council of Denver, Colorado, becomes law, the horse will be banished from Denver streets on January 1st, 1925, according to recent information. The ordinance provides that no horses, cattle, sheep, or swine shall be kept within the corporate limits of Denver or driven upon the streets. Exceptions are made to accommodate stockyards nod packing houses. America has thus taken the lead in a very important matter, and we do not think it will be so very much longer before a similar steps will be forced upon the autborities of other sections of the world.

ENGLISH A. A. NEW SCHEDULE
On and after May 1st, car owners joining the English Automobile Association will be charged an entrance fee of one guinea, in addition to the present annual subserip. tion of two guineas. New motor cycle and cycle car members will be cmrotled at the usual annual subscription of half a guinea, plus an entrance fee of 10 s . 6 d .

In future there will only be two classes of membership: car owners, and motor cyclists, with whom will be included owners of cycle cars. These changes will not effect motorists who are already mem. bers.

Motorists from the Colonies, L.S.A., and abroad are entitled to membership for a special subserpution of 1 wo guinear

## U. S. GAS PRICE INCREASES

In wivance of one cemt sald a saflom on tho wholesale price of pardme hate heem made in parts of the Is. Thas puls lla









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Complete line in Stock from Spark Plugs to Tires. Also Lubricating Oil and Gasoline.

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For 1920

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Operating C.g.C. Truck Service armomon kam san wema

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Anderson.
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Shanghai Garage Co., Ltd.
Shanghai Motor Repair Co.

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USED CARS
Auto Castle
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## Scientific Lubrication

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Because there is nothing to get out of order, because Pyrene Liquid is non-corrosive and will retain its fire-destroying properties until used, and because of its compact, convenient size, the Pyrene Fire Extinguisher is at once handy, effective and economical to maintain Pyrene Liquid is a non-conductor of electricity.

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HOW TO PREVENT OVERHEATING









 an Lende nowe ambur overheated conditions



 Whith of tim nol to minimuta fintion and to


## AN ECONOMICAL DEMONSTRATION

Ask sour b. whye man to emply your forls reservoir of it mesent oil asd fill it with Gurover. Mobiloil "E." Kou can then

 and greater power.

Our 64 pago booklet contains a complote discussion of your lubricating problems and other information of value to motorists. Write for it to-day.
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## THE

 ORIENTALDoloring Fuiansu

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# MOTOR 

A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT



## THE NEW

 CAR


### 42.104 FOOT-POUNDS BLOW ON SPRINGS

Daily, at every performance of the last anianal Sioci: and Horse Show at Denvzr, Colorado, U.S.A., a stock Overland leaped through the air eighteen feet, clearing a five-foot hurdle. In landing it sustained a blow of 42,104 foot-pounds on its spring. On Triplex Springs designed to ward off the jolts and jars of the roughest roads, the Overland took this rerrific punishment daily and took it with a grin. It emerged from the racking test with not io much as a cracked shackle bolt.

Any car that will withstand the siunts as pictured above will certainly stand up under any road condition to be met with in China at the present time.

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## best Results from your Engine

After you have used the ordinary lubricating oil for a few days you will find it heavy with sediment.
This is caused by the terrific heat of the engine. The oil breaks down and the sediment crowds out a large part of the good oil. As a result you get friction instead of smooth running.
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The increased cost may not be immediately evident but it is certain.
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Veedol will reduce the upkeep of your car from $\$ 50$ to $\$ 115$ a year. Try it the next time you buy motor oil.
Take out the thin oil to-day and test Veedol veedol Oils:-Zero Light Medium. Heaw amb Eiala Heavy, Taels 1.72 per gal. can
VEedol Transmission Gear Oil, Taels $\mathbf{1 . 2 1}$ per gal. can. veedol Greases:-light, Medium amd Hean CiyLight. Medium and Heasy Girnphite-liear Com. pound, Taels .35 per 16 . can
Sole Agents for Shanghai and Yangtsze Ports
MENCARINI \& CO.



THE Austin Twenty Engine and gearbox constitute a single complete unit with threepoint suspension. The power is 45 B.H.P. at 2000 revs per minute. The flexibility of the engine is a revelation to everyone who drives the car, and its hill climbing powers are equally remarkable. It climbed Beggars Roost in England with five passengers up, a gradient of 1 in 3,62 . Points which make for easy accessibility are the crank-case doors and detachable cylinder heads. The best Silent Chain transmission is employed for dynamo, magneto and pump drive, which is adjustable.
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THE CENTRAL GARAGE COMPANY

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[^19] MOTORING

MOTOR CYCLING
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## RUBBER COMPANY, LIMITED

Founders throughout the world of the
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# I等官 <br> ORLENTAL MOTOR 



## Vol. II.

THE NEW CHINA OF THE MOTORS.
Present Development Augurs Well for Potential Fossibilities of the Future


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 lo see the standard makes of various countries in daily use




 of 2,500 motor cars，this ippuarently including all types of
















 projected devolopment of highwaye in Anhui province and








 of foreign capisal in Chinese road projects should and will bing returns that will more than repay any time，energy
 value of goxsl roads ass a whole and then the development will combe．＇Ihe construction of national highways is in－ avitable and when the local projects meet and the present


 made pessible
 and that of Shanghai in particular，have facilities for sales

 the most intricate and delicate repairing，are doing efficient body building and are rendering every possible service that

 tions，which represent the outlay of considerable and sizable sums of money，have been recruited from the industry
 with them the latest ideas and methods of those Western canntries．Ihe matter of motor car merchandising，with

 －ー！には
 lacturess of the Linited States，becanse of mass production



 － 11 － 1 ．

Trucks are just beginning to be a factor in the China market both as passenger and freight vehicles and this is




 locause of the inadequate facilities offered by the present small maleage of the railways．Chinese in all parts of the

 thas matore The majonty of the trucks represented at
 faturers ate making phatis for athstantial invasion of the market．

In the matter of body building, the present garages operating are making long strides ahead and are duplicating the designs of England and the United States and adding many original touches. Closed cars and dimousines bare increasingly popular both with the Chinese and the foreign residents of the treaty ports and many of the cars which come to the country as touring bodies are soon converted into "all meather", cars by the local concerns. In this fiell while the designing is done by Westerners the work is done by Chinese and the result of thair effort is on a parity with the cars imported with closed and other bodies.

In this connection, it will be well to explain some of tho peculiarities of the Chinose buyors as to motor cars. The Chinese, possessing an active imagination and an inherent sense of the dramatic, prefer the luxurious appearance and appointments of the closed car, so much so that many of the limousines of the Chinese in the treaty ports have lyeen dubbed "rolling boudoirs." This demand is either met by cars of American make or by bodies made in China. After these bodies have been made lazily comfortable by rich upholstering and attactive to the Chinese eye by vivid coloring, further touches are added in the shape of mimorand Chinese vanity boxes, and in draperies of pale blue or pink ornamented with tassels for the windows.

In connection with bodies an interesting sidelight is thrown on the eubject by the recent experionces of a truck salesman in Manchuria who was asked to provide a frock with everything including fram, bedreom and lath, in order that it might be the rolling home of she of the ('himeofficials of the provinces on his tomes of impection. An interest was evinced ir amored (ars ber a milita? oflicil and still another tock a fancy to a truck on which wi- mommen: small cargo crame. But the tip for the mamponmer to be
 display and ostentation on the part of a certain aton of the
 luxurions of limousiees and chaced cans.



not mechanically enough inclined to be both chauffeurs and mechanicians at the same time. The work of washing the car is relegated to a coolie generally in the employ of the chauffeur, whose wage runs from 81 os to 8.30 a rnonth, is being at case, is is the satue in all (hinese indu-tries, of "erery flea having a lewar floa io bite his back."
 Q4bon-a price whel i- thler -tationary but the motori-1; in this ield have their trouble- as well an do there of the W'est.

Tine nakers hate found (hima a profitable mathet. Tusth for theis motor car and rick-hat products, and the najomits of the large mambactures of France. England and the Cnited States have their personal representatives on the ground working in conjunction with the local atemtAccessories are also well represented and are profitable.

The matter of exchonge for (hima dagh in ary amrancy known to the word. prevents motor cars from lavime
 and while one shipment may sell at a comparatively low price emother shipmont of the same makes and modets will hate to be cold at a higher fyume This camod be remedeal until there is an imternational statbilization of emremer and (Achange rates. It the preant time eats from the I nite.e!

 winter will bring prices down somewhat.





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## READING YOUR CAR'S ACTIVITIES.










 hem umkubtedly impressed by the great instrument boards, having dials of different frues. small needles moving here and there, switches, and electrically operated graphs show-






 pecords, second by secomd, of every activils - cawhen
suppose we were to apply to the motor car this amm



 Then bring to this pent every particle of information which









 would have scientific control and knowledge of the running








 the one instrmment board gauges and apparatus which will inform one of the operation of every single unit of the car.

There is a wes - a bel simple way. Serely eqmip, the cal with every type of recording instrument and control

 Aon:t helieve it, study the imaginary instrument board at the
 ded only instruments now actually being built-not imaginary devices at all. Of course, putting them all on' would make the instrument board look like a watch repairer's

 llait al the am.

All motorists are familiar with the speedometer, the allmentor, the ignition switches, the clocks-electric and

 dash the water temperature indicator that used to-attach to the radiator cap, and about the instrmment board gasoline


Continued on Page 62)

## ＂SAFETY FIRST＂IN SHANGHAI．

## Public Native Education Advocated by Inspector Kinipple

＂Safety First＂was the cry all over America some few years ago and gradua？ly it echoed through other great coun－ tries．It has been the slogan of the Shanghai Tramways for quite a while and now it is being teken up as the probable solution of a great deal of Shanghai＇s thaffie［． H ） lem．

A representative of THE ORIENTAL MOTOR had a chat with Inspector W．R．Kinipple，the highly efficient， cool and calculating officer who controls the traffic squad． He is a man who studios his job and does not imagine that the solving of one difficulty or even all the difficulties there may be at the moment will necessarily eliminate traffic troubles for good and all．The old disappears and the new arises and he tackles it as he did the one past．
＂Traffic problems，＂said the Inspector．＂Wre had them fifteen years ago，before the advent of trams or motor－ vehicles and we shall undoubtedly have them with us fifteen years honce．Much has been done in recent years with is view to bettering conditions，such as the wideming of rads in congested areas，improver praing and so on．This is still going on，but there are one or two ways in which the puhlic． might help．＂
＂What do you think is the greatest need！＂
＂Well，I shouid say education．It is the due？of the police to itudy the interests of all concemed and wo endeavor to work，as firk as possible，（me the hasis of the greatest beniefit to the greatest number．Pedestrian and driver have cqually to be considered and muth hris atromls been done for both．
＂But what is badly needed is the education of the masses．You see，a foreigner，used from infand for the traffic of bigg cities and tamght fom dhithomet the right thing to do，instinctively sumvers the trallice belome lae she． inter the roadwes and he knows and wameally ollo！－Whe fules of the road when driving．

On the wher hand，expmone hows Hhe dment minded manmer of tike（hinese athl when som än dhathe





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 traffic system that was introduced into Shanghai last yot，


 every day and this fact mat at me vers ditant date lat to the re－introduction of＇one－way＇traffic，which then mul？ stay，whatever the opposition．

The police also feel somewhat strongly abou！the neglinet

 it was and further improvements effected which save a



 there is no－one to admire the capable way in which you





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# MOTOR TOURING IN FRANCE, 

Post W'ar Activities Has Brought Revival of This Recreation













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 seenery and regions of antigue history. The ronds in this

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Continued on Page 61)


Recorls of all kinds in all rabioties of spots and industrios are baing boken these date and ther hat at addition to the aseociation of time breakers in the firld of the mon, m car is Tommy Milton, an Mmesian drives, Who with the ail of a spexally constucted bussonberg eixto on wheder farar in the month of April, lowered the paed secerts of the world for one kilometer, one-half mils, one miln. (wi) milder, these
 held by Raph De Pilma, who aptablistaed them with Packard at the mane place who Milton - feat took plate

 miles records which ath ramain in the imms of 1 ), I'alant.

## WORLD SP1EEJ REC(ORIS

(Made by Tommy Milton in Mi C Cylinder Inemombers car at Iaytona, Ilit.)

| Date. Distance | 'Timı. | .11 1.11 |
| :---: | :---: | :---: |
| April 27-One kilometer | 14.40 | 155.37 |
| April 27-Ono-half mile | 11 示 | $1 .$. |
| April 27-One mile | 23.07 | 150.0.4 |
| April 27-Two miles | 16.31 | 1.in) |
| April 25-Throo milus | 1.1\% 14 | $111 .$. |
| April 25-Hour miles | 碞11 | $110 \%$ |
| April 25-Nive mile | 2111 |  |








 all of them.





(Continued on Page 65.)



# INDIANAPOLIS TO AN AMERICAN. 

Gaston Chevrolet in a Monroe Takes Memorial Day Classic.

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## THE FTRETTKN

(i.stun) Chevolet
liene Thomat
Tommes Milton...
Imamy Vurphy...
Ratph de Palma
Ehblie llearne .
Jean Chassaigne
Jia. Thomits
Rulph Ki. Multord
Iules (ions

Momber
liallot

1) ueverolicer:
2) Hevinutherg

Ballut
Wuesent ers
Ballot
Montoe
Mulford
Perbent






 I'imoll had.






















 for during the whole race only thirty-three tires were chang.





 -at- hlar and vil. Retter ignition was employed on the win-



 Whe Indianapolis track. Outwide the stops for tire changes, the next greatest offending member was



 driven by Chassigne, also suffered steering gear trouble.


## SOME OF THE FACTS.

Distance-500 miles.
Purse- $\$ 50,1000$; $\$ 24,000$ to first; $\$ 10,000$ to second; $\$ 5,000$ to thir\}; $\$ 3,500$ to fourth; $\$ 3,000$ to fifth ; $\$ 2,200$ to sixth; $\$ 1,800$ to seventh; $\$ 1,600$ to eighth; $\$ 1,500$ to minth: $\$ 1,4(10$ to tenth.

Thati me:sures $2 \frac{1}{2}$ mile to the lap, is 60 ft . wide with 20101 it that hamked at angle of 16 deg.

## M.P.H.






## COMBINING GAS AND ELECTRICITY

## British Engineer Sees Possibilities in Use in Transmission

Fortunate for the world the metor car industrv like mans of the cther manufacturing industries of the world is nossessed of a restleas dispmition. Nomor (an derignes engineers, makers and owners alike are studying the perfection of the various parts of the motor driven vehicle and many interesting developments are taking place. A British gngineer has tumed his attentices to the use of an : 1 atric transmisson and gives the expsition of his view in the





 past of the (ar which som Witl-meminc prom have met


































 relucing the gear ratio. With an electric motor, hown.r.





















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 (Con) + weal … Fage 6.4
"RIBP MOVING" NEW SLOGAN.
Shanghat Nour pas. Grmall Publaties New Korking Rule














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 there ore - all whem thonge to ber dome bas walke must be eliminatod and the duties of the trattic policeman


## CYCLE CARS FOR CHINA.

Renival $=1$ nteree in Fre. fe Ertugs Speculation.
















 for marketed at a ratonable price and made with a comple. lwely short tread, would find an easy and profitable market

 try and would more especially be adapted to the narrow
 I:mape of light weight, low cost of maintenance and upkeep and low initial cost.

Whate. of course thi- is muchly in the nature of a conjecture yet it presents a matter which might be made practi(ai) if thmomghly inse-tionted.
[nquestionably there would be more owners of motor anm: In (hena if pice wre mot so prohilitis. and the evel

 of China hitherto untonched the the antomention industry mel would umdouteradly be of exceptional educatemal value. Ixel! In cratine a demand for standard motor cars and alde in showing the necessity of road construction.

## LONDON SHOW TO NEW HOME?

## White City May Succeed Olympia As The Site.

shursestions for the next motor car show in Iondon appear to hase rewhed themselves in favor of adapting one .ur thore of the larger baidders of the White City, London, luy : LiLathtic simfe how. probably about two and a half times the size of an ordinary year's Olympia show. The Whine ( It! was limit as a femperary summer show and exhibition about 14 years ago and during the war was taken …er he the formmuent fior stoms.

The buildings have deteriorated and the cost of renovatIIID theoll for a propmeed -1mmmer whow and people's haunt
円ฺтй:

## BASTILE DAY IN SHANGHAI.




## INIOTOR DEVELOPIVENT IN SOUTH CHINA.

## Hongkong and Canton Show the Effects of the Present Day Trend.

While the north of the vast country of China is forging ahead in the field of automotive transpontation and givins signs of the vast demand that will soron be made upon the motor car manufactuzers of Great Britain, the United States and Furope, South (hina is abso doing her hit tenard the development of gasoline carriers, although the advancement has not as yet taken such a commereial trend as it han in the north.
"There are over for cars in Hongkong at the penem time," said G. W. Chandler of the Dunlop Rubber Co., who has recently retuned from a trip) 10 the south. "but the present prospects are that there will be an annual increase of fifty percent for the next two or thee yars. 'Ther government is giving every attention to road building and the roads now in use are undoubtedly the fimes in the Far East. With this as a present indication, grata smodes mas be looked for within the nexi few years.
"The ntilization of the motor ("ur ats at commemal and
 of the city witt: is "arehouses dredelod atome the wate












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# The Oriental Motor 

Motoring Motor Cveling Aviation<br> ared the lior Y as liom wlit<br>\section*{Founded April, 1919.}



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#### Abstract

Subscription Rates: Mevican $\$ 3.00$ for Six Months or Alevican $\$ 5.00$ lior One Year in China, Japan and The Far East; America, G. $\$ 5.00$ Yearly; Great Britain and Europe, £1; payable in advance. Single Copies, Mexican $\$ 0.50$ each.

\section*{Advertising Rates on application.}

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## NOTICE TO CONTRIBUTORS

The Editor will be pleased at all times to receive photographs, sketches or articles of character likely to be of interest to readers of this publication. It is understood that contributions will not be paid for unless remuneration has been stipulated and arranged for in advance.

All correspondence should be addressed to the Editor, The Oriental Motor, Five Hongkong Road, Shanghai, China.

[^20]Registered at the Chinese Post Office as a Newspaper.

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## EDITORIAL.

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if such a thing be thenght fowible a combination of makers of motor cars fomed to advance the financer for this and ton the roads to come in sithation. and flaces whele walization is only pessible theongh such mema:

This field is leing cratched $n$ w and oweral investigator: have recently rivited the camotre in (1) int:1ets of their own concerns in highwas developme bit. Jany plans have been rugeeted, but up 1o the fromil day mone have materialized.

What is happening now in the automotive field may soon clear away and be frgoten in an inc. .asd prosperity but the circle of business will again bring such depressions and the present circumstances should be a sufficient inaication that some provision must be mad for the futme This provision must lie made for the futmo in the leasi developed and most promising field for the industry, the Far East, and particularly in China

Though the saturation point for motor cars may not be reached for a century of more, it will be further prevented by the development of the Chinese market and the development of this maket means more than mew atatoge and representation. It means intensive study, widespread propaganda and the service of experts. Iud the begming of the development and its continuance means a most highly profitable return to those who undertake it.

## THE FOO(HOOV Bl'S LINE

Elsewhate in this iswe of THF ORIENTXI, MoTOR is published an item telling of the efforts of a Chinese company, operating a motor car and bus line in the city of Foochow, to ohtain capital whth which to bus mow buses and to improve the roads which their presem service is now traversing. The sum asked is $\$ \$ 00,000$ ('hinese currency, which is a compaativl! small sum, when compared with similar smas advancod for similar parposes in the 16 estem world.

Sut what concetms and impresses Hese who atoe interested in the developing of motor brampurptation in the Far East and in China particularly the mose is mot this sum of the loan but the lace that the (hamese of dhe semme
 of the use of the motor (ale as : prible semper whale and
 business.



 advocates.











 vinced that Old China cannot be changed and aid and impetus must come from the outsid.


 these post-war days-another bit of modern civilization will







 ine China.

Japan hats he: 11 compliment I for heo ment do whopment, St whout the intemal imperll- athe emenmerement
 the island empire. Japan has a limited temitory while
 communications offer the reslization of the greatest dream ally highwat , mgine 1 could hate.

The interest which fir-t bines to thana a platival
 ment. wial be the interests who will catly the faramome pesition and will reap the exhemeh tmotm! tutere of the.


## WORLD MOTOR CALENDAR.

## U. S. Shows.



 l'alacer

## Foreign Shews.


 (110) 1111! ! ! :




## Contest:


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## BUILDING CHINESE MOTOR ROADS

## The Man Obstacles are Stones and Spirits








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x Litani rympa* 4.1
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## the china garage co.

21 FOOCHOW ROAD. SHANGHAI.

## STREET IMPROVEMENTS IN CHINA.






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## ANHUI MAY HAVE MOTOR SERVICE.

## Chow Hsueh.hsi Heads Plan for Roads and Trucks.



 lion of moter cars both for passenger and freight service
 ( H.11:1.

 mumber of the prominent native business men of the provWar Gaining strength by additional support, the plan was






 we from: Wiuhu to Tuncini: from Tungliu, opposite An-





 1.wvernment Railways in the metter of distribution.





In widente of the astilit for oremazation : Wh the part

 will finance the tea growers of this and other provinces.
(lima i. womine on fast in the matter of mat developp-
 Whent. Development- - beth ats the are acourring in the maporit! if the frowinces and ate foremoners of at nationwide movement. So matter what difficulties and shortcomings may be laid to the door of China in a political way.
 Whe prontesive typ. Thes men hatereogenized the persi-




## CZECHO-SLOVAK AUTOMOBILE SHOW.

## Twelfth Exhibition to be Held at Prague This Month.

 Jaly lifh u, e.jth. in the Falace of Industry. Irague, their
 wili melude mot moly pivate (als and commercial motor vehicles, but tractors, motor plows, motor boats, accessories, athl $\mid(x) l$. This heing the first exhibition organised in the bather indeqe-ndent state, the (zecho-slovak Republic, will innhitew attract considerable attention, from all sections of the riade.

## THERE IS GAS AND GAS

## Expen lells Fuel and Oil Qualiles and Enyme Condmizns by Smake.












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 -s I Entmomy, oily substance which catches and holds the -. Lanin burnt oil, mineral matter, ote, until the leat of


'Ihe gasoline refined from the paration lase l'












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 properly:




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 whmber. will hold the so-called lampblack there until the











Continued on Page 74

$\left\{\begin{array}{l}\text { GOOD Mien } \\ \text { CORD TIRTS }\end{array}\right.$

# MOTOR TAXATION AND IMPORTATION. 

The Problem Effect of the British Plan and What the French Have Done.

C





 liximbe. placel at han on: the cmpantatom of antommiol.... under a certain weight. Ill of which complicates the sithat-



 a deselopment whith affer the Brask cins in the foreigh and coloniel markets and may spread as other such reforms hate dome and a tamilarit! wht what is gatig on in valuable froth to the dealer ant the owner in the Far Fast alike.

Probably one of the best explanations which has been made of the Routish taxatum plan is that wheh was recentl?
 In the I nitend states for the trade a part at wheh follows:

It seems highly probable that the average American car an ...ld in England at the prias tht time will lad anmewhat
 by the Chancellor of the Exchequer in his Budget speech,
 \&1 for each horsp pewtr. The eal with ath chathe of low or medium efficiency which is, nevertheless, rated high, accordmat the Bmon Tratur? fommulat

11: -

! !
 compared with cars hather the shall but effecomt engmes favored by many British makers.

The Fond, We cample is rated at 2.2 4 hy. athe at



 aborate consumpemen of luet in Find cans used in private sompe has leeen about -4 mpg . Imperal gallon, and the ammal molege under gono. the new scale reprements an annual merease of rumbug conto atmouther for wer sin. The foweland "Fur" with its rating al in t hpe will be


 -t present in tax and permil duty.

On the wher hand, Bitish car makers will be handicapped in foreign, espucially ('olonal, markets. The home
 that will develop, a high power in relation to its cylinder
 it may be kept within bounds. Rut the Colonial buyer, from all repats. does mor wam thas lype of vighes. He

 whtom suth con-tath allentum in the other typ demands.

The British maker, therefore, will be obliged to consider



 tained at a higher level than would otherwi.. be the case.

The Hers : mam whedion to the new taxation is not so much that he is being called upon to provide in this way - The sthbandmor for road improvement and maintenance foll that the schem. takes now aceount of the amount of "ue 10 which the. sado ate put by the individual. Mileage due mon womt. The man who dhives a :36-hp. (ar will
 rem: font this class of user could well afford to pay more. The vast majority of Pritish owners, however, cover between
 in a great many cases, to afford to run a car unless they


The what, palar car will be the light fomes-seater with an engile bated at IO 16.12 hp . The preant 10 -hp. Humber and l2-hy. liover fill the lifl. The ${ }^{\text {an }}$ have espectively four-

 The first, therefore, will be subject to a tax of $\$ 52.80$ and
 fren commin lapills mofaver for several ratr- past and they will umpnestionably increase in popularity.
it would seetw, therefore, that if American manufacthlers ate th make a gixal showing in the Rritish market thes will hr mowe han wh dpendent upen offering their cars at ${ }^{\text {c }}$ competitive prices which will compensate users for Whe logher rate of tax-minhess. that is, it in worth their white tor consode Rrilloh rempirements in planning their designs. Commercial motor users seem fairly content with their side of the matter. Thes hat made up their minds to bring taxd despit. their exemption hitherto, and the fact that the! are topa! on unlaten weaght-from $\$ 4 \times$ under 12 (A1t. 1:344 th to 8144 exee ling 4 tons ( 8960 lb .) itl - te" iwe I mileage. will menurage more efticient methods
(Continued on Page 56.)


## SERVICE STATIONS EVERYWHERE.

Austin Plans Establishment of Large Chains All Over The World.





 Willians, superintendent representative of the company


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f). -pilt. the fact thet the wat homeht a cuscotion of



 (1.) the W.at.














 curied out.






 (at. , tready riding in them.




 He British Empire and has recently instituted mass pro-




 the vicious circle will continue, I fear, until some genius of political economy finds a solution. There is a markel
 intelligent laborer is realizing that there must be a limit (1) hi- d.1math1-*



## "SOME" CAR FOR SALE.

## But The Advertiser Might Have Also Added "and Some Price".

Whether or not this happening can be taken as a





 that in bley of the tate that the alreqtiser is about to take
 dispose of his 1915 Model, Chassis No. 32 R.D., RollsRurce, with a five passenger torpedo body, having new liapson tires, a Rapson deluxe rapid jack, "can't-soot" super-spark plugs, a mechanical hood lifter, an electric lightma amb samber epmipmomt, ath elctric horn, and a


The sting comes, however, in the conclusion when
 I- 1: male 1. fact that the best offer over $\mathfrak{£} 4,000$ will be considered.

Whely all hrimg the ejaculotion. Which might hato

 hury.


The Goodrich Adjustment Basis Silvertown Cords, 7,000 Miles

Fabric Tires, 5,000 Miles


IF A BETTER tire than the Silvertown Cord is ever made, it will still be a Silvertown Tire, and Goodrich will make it.

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## Goodlrich

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1в Jinkee Road, SHANGHAI. Tel. Central 4932. PEKING, TIENTSIN, HANKOW, HONGKONG, DAIREN.

## THE LITTLE THINGS ABOUT YOUR CAR.















 allombional missing, especially if the missing is mere fre-

 14. . .



 Til







 cloth
 hy leaking valves. The hot flame which escapes past the valves dismembers the valve stem, softens the valve spring.
 benta fir en mater





 - ver $1 / 1$ anasive surface with an oreillating movement.
 of the Ford chassis, because of the single point suspension As a general thing, two blocks and two tacks must be used.

l.wh minhll wh thit page will be pabli-hed little


















 is cansed by the connecting rod of the front cylinder dipping


 nuder the crankcase front frame bearing. If there is a



 differential housing and gets on the hrake bands, making it
 When the brake pedal is depressed. To remedy the trouble







 *u, not being driven at the right speed due to the slipping.

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When -phar- ate bes will and atre liseless." if they

 16. getabe of vil.

## yond 7



## THE NEW FORDS

With Electric Starting and Lighting Systems HAVEARRIVED

## Canntimunt <br> Sales Manager.

Sole Agents<br>HUDFORD GARAGE<br>OWNED BY DODGIE \& SEYMOUR (Chinal, LTD)<br>89.91 Rue Montauban<br>SHANGHAI<br>Phone for a demonstration






## IN THE MATTER OF TAIL LIGHTS.

## Police Vigilance Shows Need of Both Oil and Electric Types.
























 frit. of meelnnics in automotive work through early ex-
 atid =cWing machincs.

this size of tire, Fire-

 them fololl at the mot matll poliot the


## Most Miles per Dollar

Sole Agents for Chum
THE CENTRAL GARAGE Co.
SHANGHへI
Sub-Anents, China Gumage Co.
Firestone

HERE'S WHAT IT MEANS!




## A BUS LINE FOR FOOCHOW.

## Chinese Company Seeks Foreign Capital For Development.







 His direcetion.









 f. 1 141





 flote at protis.

## SOLVING THE HOUSING PROBLEM.

## U S Motor Manufacturers Are Taking an Interest in Real Estate.


 -at ind facturess have found that as a matter of production en-


 fan liant is one of absorling and ofton aypravating inton-1




 among the larger foreign firms in the Orient-in fact, in-




 workmen is required to pay 10 percent of the purchase price



 interested the Willard storage Battery Co., the Jordan and the chantion Companas, ant othre The rot? if N: II lork has taken up the loousing problem as a municipal move.
 opreative association for the housing of their workmen. ('incinnati is going to invest $\$ 1,000,000$ building homes

 miltion dollars for building and the Prest-O-Lite interests wet affor have suphlint amoth.I halt million



 assisting its workmen by combating the high cost of living

 The welfare work is supplemented by a laundry, a hospital, a noith and safity department, a dental office and labmators. a motion pricture studio, park and athletic field, bank and amditorimm, celucational and legal department, and a home


 of his farms, the 80,000 workmen of the Ford plants ex-
 The bat al linng is reduced fom thenty to forty percent.

## NOTES FROM HERE AND THERE








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 stationed permanently in Peking and will have charge of the




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 Come for Chima，recontly in shanghai They will be at home







 11： 11 いロル！
 Moreland Motor＇Iruck Co．，of Los Angeles，C＇alifornia，is
 alleaty visited Japan，Kiomea and Noth China and on










## The All Standardears

$I^{T}$- is in a beautifully lighted and well-aired factory, stamding on the edge of a brayy common away from the city din and smoke, that finishing touches and tests are given to the All-British "Standard" Light Cars, which iswe thence bobmet orem inhabited quarter of the world.
"Standard" Light Cars are designed and built for the comfort of the users in every' climate and every circumstance. They are roomy. There is plenty of power. There is ample ground clearance - $9 \frac{1}{2}$ inches. The springing is adequate even on the worst roads. The equipment is equal to that provided on the biggest and best cars. The hood and quickly attached side-curtains (which open and close with the door) render the car storm-proof and dust-proof almost instantly. The bodies are built of wellseasoned timber and aluminium sheets which are unaffected by high or low temperatures and damp or dry atmospheres.

> In nearly every part of the world there are duly authorised agents for ". Standurd" lisht cirs. whose long experience of them will be found of the greatest advantage and service to "Standard" purchasers. Catalogues and full pariculars will be furnished on application.

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U 5 Car Afvances Triv al as Compares with Olher Products.



























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## STAR GARAGE A TRAIL BLAZER.

Shanglai Establishment Marks Road 10 the Future.




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M. Man Rolvo.
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 marelal socusit-at will tim modern torice of the present dey IF domminating. I'articulanty is the ai lon it lo il ato to










future of China wili ho in the motor wordd. Prominent among these, with the largest floor space of any garage in Chine, is the Star Garage of the Shamgan ( iatace Company, Litd., at 12.5 Bubbling Well Road, stanalaif. Is has often boen pointed out in (hina, the use of the wond garage in the majority of cases is a mismmer and thin iparticularly true of the Star (iarage, which cmbotios ]matically evory phase of the motor industre with the exception of ongine and chassis building-the latter only bing eliminated liecause of a lack of demand.

Tho building of the Star Garage, which is four storjes in heighi, and as has been mentionod before has the lawe floor space for an industry of its kind in China, is a modern semi-fireproof structure, embodying in its front design the Moorish style of architecture. The front part of the building was constructed by Mr. A. Cohen in 1912 as a combined ricsha and moior establishment. The growth of the former business necersitated the completion of the large shop building in the rear to Burkill Rond in 1914 Turning his entire attention to the dic*hat busess, Als Cohen disposed of the property late in the year of lens tor the Shanghat (oarage, Company, at which time the stan Garage came into oxistence

The shangtai Garage ('ompmy, Lit., the operatims company, was formed in hoptember of 1916 with the

 Shanghai, which was being aperated hy ('ap. . I. Fi, Inch
 with the fomation of the shanglai (iange (impme, Ihe Fastern (iaragn (ompany was taken owey with it - monewl and interests. (A deserphive stom? of the brame (iaman












 $1^{\prime} 314$.
 E. Inch, manaying director: Iteon Freidman, manager ; Max Preidman, sales manager: F. C. Eitter, service



 L.Ol natives, who !ave been carefully trained in the vations
 stilled in their special work, is maintaimed.
lingoal attention is being given by the company to

 Jodah joined the staff in the capracity of manager of this

of Shangha.


 The Fredman brothers joined the staff of the plant in May


 of the antomotive industry, having traveled extensively in

 and motorcycle racing grame and their names have been



 amio or performance.




1.4日…18, it!


Shan low . .... .
Hoor by Elwahe.

Realizing the future before the science of aviation the brothers turned their attention toward this field and became associated also with this development in its carliest atages in the United States. They came to the Far Eisa an managers for Katherine Stinson', on of the foremost women fliers of America, and seeing the opportunity for the motoring interests in the Fiar East shortly afterward asmexated themelves with the Star Garage.

Capt. J. E. Inch, the managing direder, has beon closely associated with the progress of the mator car in than field of C'entral China and has supplemented this expermer by keeping constantly in touch with the silumion h...11 in various other sections of the W'ar Fist amal alato in the l nit al Statos, Great Pritain and Furope. ('aptain Inch has onls recently returned from the United Silles innd limelonl. where he went to make inventirations for has ramblatly In all phases of the motor intustry, (0 amang.m. 10 lon when


























# PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER CARS 





OLYMPIAN

$44 \begin{array}{llllllll}4-33 \times 4 & \text { A-Lite A-Lite } 100 & 30 \times 3 \frac{1}{2} & \text { QD } & 985 & 9 \times 5 & \ldots . . & 1575\end{array}$

PACKARD
$\begin{array}{ll}3-35 \\ 3-25 & 12-3 \times 5\end{array}$ Delco Bijur $\left\{\begin{array}{llll}136 & 35 \times 5 & \text { SS } \\ 128 & 35 \times 5 & \text { Sis } & 15200 \\ 52000 & \begin{array}{l}5550 \\ 5250\end{array}\end{array}\right.$
PAIGE
PIEDMONT
JILOT

lORTER

## MONITOR

|  | 6－314 $\times 4 \frac{1}{2}$ | Dyneto |  | 121 | $33 \times 4$ | ． | 82475 | 82475 | 3475 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ROE |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { F9 } \\ & \mathrm{MOON} \end{aligned}$ | 4－31944 |  | A－Lite | 115 | $32 \times 3 \frac{1}{2}$ | SS | 1440 | 1440 | ．．．．． |  |
| 6－48 | 6－3 $3 \times 4 \frac{1}{2}$ | Delco | Delco | 118 | 32x4 | SS | 2485 | 2385 |  | 833 $3^{3}$ |
| 6－68 | 6－32 $\times$ ． 5 年 | Delco | Delco | 122 | $3.5 \times 5$ | ss | 3050 |  | 29.0 | 3950 |
| MOORE |  |  |  |  |  |  |  |  |  |  |
| $30-\mathrm{F}$ |  | A－Lite | A－Lite | 110 | 30x 3 直 | QD |  | 109\％ |  |  |
| NASH |  |  |  |  |  |  |  |  |  |  |
| 681 | 6－33954 | Delco | Wagner | 121 | $33 \times 4$ | SS | 1695 | 1695 | 1875 | $2 \times 95$ |
| ASH |  |  |  |  |  |  |  |  |  |  |

NATIONAL
Sextet $6-3 \frac{1}{2} \times 5 \frac{4}{4}$ Delco WSths 30
NELSON

| D | $4-3 \frac{1}{8} \times 4 \frac{3}{4}$ | Bosch | U．S．L． 104 | $32 \times 4$ | SS | $\ldots .$. | 1700 | $\ldots .$. | $\ldots .$. |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| NOMA | $6-3 \frac{1}{4} \times 4 \frac{3}{2}$ | Delco | Delco | 128 | $31 \times 4 \frac{7}{2}$ | SS | $2 \times 00$ | +2900 | $\ldots \ldots$ | $\ldots .$. |



37－A $\quad 6-213 \times 43$ Remy Remy $11232 \times 4$ SS 14501450 ．．．．．． 214.5


PARAGON

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| $6-3 \times 1 \frac{1}{7}$ | Conn |  | 121 | $32 \times 1$ | $\ldots$ |  | 165．5 | ．．．．． |  |
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| 6－47 6－31944 | Willaral | Delco | 120 | 33x 1 | ss |  | 1695 | 172. | 2600 |
| PEERLESS |  |  |  |  |  |  |  |  |  |


 PIERCE－ARROW



4－4．6x63 Berling Wsths 1f2 35x．Kis ．．．．．．19200 1100

PREMIER
 R\＆VKNIIHT

 REO
 REVERE


 SAYERS


 CLVERIN




 STANLEY
Stemner 2－1x．
 STEPHENS
 STUDEBAKER



 TEMPLAR


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## haUl by Truck

## BRITISH MOTOR SPECIFICATIONS AND PRICES.







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\text { HRHOL.JOHNSTON. } 4 \text {-cyl. } 80 \times 12015.9 \text { h.p. Chassis }
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C.A.R. 3-cyl. © 8 x 80 10 h.p. : . - if
C.ILCOTT. 4.eyl. $69 \times 11011.9$ h.p. Chas. (1/2-alion




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1) M1MLER. 6-cyl. $90 \times 13030$ h.p. Cl .

6-cyl. "Light Thirty
11.111 い. 1-cyl. $69 \times 12011$-12 h.p. 2 .x.em

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DAY-LEIEDS. 4 -cyl. 64×100 10 h.p. 2-seater
DOUGLAS. 2 -cy1. $92 \times 9210.5 \mathrm{~b} . \mathrm{p}$. Chassis

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324

| RUSTON-HORNSBY. 4-cyl. $80 \times 13016-20$ h.p. Chassis | £550 |  | E! 10. |
| :---: | :---: | :---: | :---: |
| 5-seater Touring | 630 | 4-seater Touring | 1.330 |
| SINGER. 4-cyl. $63 \times 8810 \mathrm{~h} . \mathrm{p} .2$-seater | 450 | [^NC. 4-cyl. 13 h.j. Chassis ... ... ... .. | $\because 170$ |
| Coupé... | 550 | VARLEY-IVOODS. 4 -cyl. $69 \times 12012-22$ h.p. Chassis | -3, |
| SIZAIRE-BERWICK. 4-cyl. $95 \times 16025-50 \mathrm{~h} . \mathrm{p}$. 5 -seater Touring |  | VAUXHALL 4-cyl $95 \times 140$ 25 ${ }^{4}$-seater Touring | 1.360 |
| STAFEORD. 4 -cyl, $69 \times 12011.9 \mathrm{~h}$.p. Chassis ${ }^{\text {cheater }}$ Touring. | 1,600 400 | VAUXHALL. 4-cyl. $95 \times 14025$ h.p. Chassis ${ }^{\text {5-seater Touring }}$ | 1,360 1.750 |
| 4 -seater Touring | 495 | 4-cyl. 30 h.p. Chassis | 1,500 |
| STANDARD. 4-cyl. $62 \times 1109.5 \mathrm{~h} . \mathrm{p}$. Chassis | 505 | 5-seater Touring | 1,960 |
| 2-seater | 545 | VULCAN. 4-cyl. $90 \times 13020$ h.p. 5-seater Touring | 1,000 |
| STAR. 4-cyl. $80 \times 15015.9$ b.p. Chassis | 500 | 4-cyl. 16 h.p. 5-seater Touring ... | - -. 01 |
| 5 -seater Touring | 750 | WAVERLY. 4-cyl. $76 \times 12715$ h.p. Chassis | 475 |
| 4-cyl. 20.1 h.p. Chassis ... ... | 675 |  | 625 |
| STEseater Touring $\quad . .$. | 825 | WESTWOOD. 4 -cyl. $69 \times 12011.9$ h.p. Chassis | 500 |
| STOREY. 4 -cyl. $85 \times 13220$ h.p. 5 -seater Touring | 700 | WOt 4 -seater Touring... | riv. |
| 4-cyl. 14.3 h.p. Chassis ... | 525 | WOLSELEY TEN. 4-cyl. 10 h.p. Two-seater. | 500 |
| 2-4 seater Touring ... ... | 600 | Three-seater | - ハー, |
| STRAKER-SQUIRE. 6-cyl. $80 \times 13020-25$ h.p. Chassis | 1,200 | Coupré | tith |
| 4-seater Touring | 1,600 | WOLSELEY FIFTEEN. 4-cyl. $80 \times 13015 \mathrm{~h} . \mathrm{p}$. Touring | (10) |
| SUNBEAM. 4-cyl. $80 \times 15016 \mathrm{h.p}$. Chassis ... | 850 | Saloon | 1.000 |
| 5 -seater Touring | 1,125 | WOLSELEY TWENTY. 6-cyl. 20 h.p. Touring de luxe | 1,150 |
| Limousine | 1,275 | Latudaulet ... | 1.t00 |
| 6-cyl. 24 h.p. Chassis | 1,125 | Coupr | 14.01 |
| 5 -seater Touring | 1,400 | ZEPHYR. 4-cyl. $69 \times 13011.9$ h.p. Chassis | $\pm 00$ |
| Limousine ... | 1,650 | Two-seater | 470 |
| SWIFT. 4-cyl. $63 \times 9010$ h.p. 2-seater | 550 | Four-seater | -(10) |

## Star Garage a Trail Blazer.

(Continued from Page 41.)
The ground floor of the Star is c*upied at the Bubbling Well entrance by a show:oom of the latest type employed in the United States and is always fitled with a buckground suitable to the saason of the year and which invariably sets off the motors shown to the greatest possible advantage. To the right of the entrance is the tire and accemary showrom which is modern to the smallest detail and most inviting to the prospective buyor. Back of this rown is the oftice of the sales manager and acrosis the entrance we? is the office of the manager of the tire depmoment and small:y thonroom. Going bark into the buidting is a later stor: ge space for the ears of the patrons and fon assomblinw : 1 oll othor storage purposes. Flanking the storage spate :re the tire warerooms. 'I's the rear ol' the somen dopmom, at is thes hire service which is one of ("nman mast malam, the (:all heing in the best of fhysical eondition, (onstanlly Im.! of the supervision of the hire serviex stpperintenctere whese liase

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 cient and adegtate service th. The patmon- it the platht It the front of the first floor are located the othces of the comfroy and alen the othee of the mantsum drem ...

The stond flowe is giten ower blatie patht and drame










 able workmanship coupled with fast servin.








 * ©







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## LADY DRIVERS ARE BECOMING NUMEROUS IN ENGLAND


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GAS A PROBLEM IN U. S.

Checks on Consumption Are Being Sought.



 and dealers are wondering what can be done to check the
 The latest increase marks a rise of 6 cents in the last 4 ! months. The upward trend of prices in America will bes followed in other parts of the world. The retail price in


Still higher prices are predicted by the Bureau of Mines




 a.cimplished to solve the problem of mounting costs bevond efforts of refiners to produce a greater percentage of gasoline

 tive Engineers, the I'etroleum Institute of Imerica and the


 inlerstoxd to have prepared a report on fuel which will lie read at the smmmer meeting of the S. A. E. at ottawa Beach the last of June. Exhanstive experiments are being made
 ...l. .on the Itlantic with freds which will be substitutes (1.). Lat...ter.

The refining companies themsilves are exprementing

-... line from crude oil. Neanwhile, more and more of

 inth of cumbe cal. It is lowert in California where the prorathange don- mot exceed 12. It is highest in Illimois an l



In districts where the smallest amount of fuel is being whameat, ac all mantace is beine made in improving the showing. The fact remains, however, that the production uf crude oil does not equal the refining capacity of the
 at day while the refining capacity is $1,250,000 \mathrm{bbl}$. a day.
 av 1 w.rnized ly the oil producers. One is uncovering new Fheids and comstant efforts are being made in this direction. Another is increasing the percentage obtained from crude ai) The itant is emantation. The prolucers hadd that



It is contended by the oil companies that the driving ;minr of the hed ould thatas In in high an it ever was. although the specific gravity has materially decreased. They dectare specific gravity has no bearing on the situation and that the boiling point is what counts in internal comhustion encines.

The l'etroleum Institute is directing its efforts, Imw:... lxath at improving the quality and quantity


# FIRSI U. S. MOTOR CAR SALE. 

11 Was Made in April Twenty-two Years Ago.

## (i) $111116.1=14116010$










 flemberess of the latullat fopl|.





 ronage, Their genius has brought to millions of thei: countrymen undreamed of pleasure and prosperity

 the inventions of luke liene. W. .nderful hut impmetmel
 conceive that their inventions would develop the third





Captain Nicholas Joseph Cugnot is accredited with









 fon...d to ahandon his furtier experiments. In $18: 31$ Walter Hancock, an Englishman, built a steam car that he called the Infant. This car made regular trips between Lam In
 Brighton. This vehicle carried eleven passengers and ".

 their basic experiments in the field of internal combustion.

 patent, covering the use of the gasoline engine as a pro-










The tira mad rate. mun on 1-94. Was known as the i 110 Roben rate wre a coure of an miles. It had an



 11 hak.an. III. and when on Thankspiving Day, 1595, was the firs droman rowd race. Only two cars were entered


In Dmertes. Wharise E. Murlea and Elwored Haymes

 ra, the ir cars is net itcrurately reoorded. but it was omme-


 of font (arben, Pa Mr. Mlison dan the (ar for two years ant ar 11 imton - ablectation whed it lack to the Winton Company where it is still in existence, practically as capable


 W. Whe. hamed upwn the Europewn Panhard and Levassor W1. was introduced. The difference between this Euro-
 former a central frame to carry the power plant and act as Whe Lin stane of the cill -tricture was developed. This


The history of the motor truck antedates the passenger
 in England, and Evans, in America, designed their selfmop then veluctes tor ammerat puranises. Cugnot's first venture was a machine to haul heavy artillery: Hancock's and liussell's machine were designed as commercial stages, whke Fand ixpermmemt aned at practical road wagon.
 priments of Daimler and Benz in the year 1885.

The prichilities of comunercializing the automobile were priveived by many of the American pioneers. While the
(Continued on Page 77.)


NEW TRANSMISSION FUR TRUCKS.

Compound Shift is Designed to Meet Needs of Motor Freighters.








 "190\% 11




- 16. 1...lic , 1






 trucks and permit of maximum speeds up to 25 m .p.h. In
 the truck itself, this making the loaded truck more than 100

 (o. Oakland, Calif., has developed a special iruck trans-


 sult is ohtained be a variahle speed countershaft, the gras


The transmission is of the seared-up type, that is to - I, with the gears set for the highest speed the tailshaft turns faster than the clutch shaft. The transmission differs
 -hant mesh grars, one or the other of which can be put into
 hicp down the distance between bearing supports and prevent noisy operation, intermediate bearings are placed on both the prumaty and scomblay thafis. The low gear for-








 in starting heavy loads reduces shaft breakage as well as the strains on the springs and radius rods. Once the load

 to keep even a full load in motion is relatively small and





 momated free upen the countershaft, on coller hearings, and when not locked to the shaft by means of the jaw clutch, cmata freely upon it.

 !las two yar

## THE MILEAGE RECORDS

It is presumed that every car owner keeps a little hook



 b.an ar $11 . \ldots$, and if the car begins to fall off in its mileage per



## _-the sign of wearing brakes

To the trade-Our dealer-protective policy assures you real trade protection.
Write for details.


## The KOSTER COMPR MY

SINGAPORE
SOERABAYA COI.OMBO

San Francisco, California,

Raclusive Representatives for the Orient

# THE SITUATION IN GREAT BRITAIN． 

labor and Material Shortages Main Difficulties．














 c⿴囗⿰丨丨⿱一⿱㇒⿵冂⿰丨丨一心 canse of the hold－up during the fifteen weeks of the moulders
 finh dheal the emplation of other parts，which being both




 cormed with stampings，or even with some finished item such


 1：Liksur，and keen competition for centain body－making


 has been made to alternative upholstery materials．





 just now，which－present prices apart－and we recognize
 temporary combitions，are remarkable for combinin－mbe

 dhallenge comparison with imported batch probluction cars




＂．＂lhere is also the factor to be noted concerning British


















＇Yes，the cars are coming through；what we now need
 and the business side generally are adequately organized．



## U．S．CARS IN GREAT BRITAIN．

## Census of Makes Offered is Recorded．












 ＇the．bit arrived），Tiberty（six），Mabohm（six），Maxwell，






## U．S．TO MAKE EIGHTY MILLION TIRES．


 1920 will b． $8(0,(H N),(O H)$ for passenger cars and motor trucks． Tite pre－it oumpur if the ammo is spmeximatuls




## LIGHT

 CARS 11.2 H.P.
## THIS IS THE CAR YOU HAVE BEEN WAITING FOR.

Are Not All Your Requirements Included In The Following Points?

- LOW (iAS CONSIMIDION.

Super-efficient, smooth running four-cylinder motm:

- HIGH 'IYRE MILIA I (iE.

The Morris ()xford in a real light catr.




- EXTREME EASEOH (ONTVOI.
lespeciall de-igned tor the lath drint.

Decp and luxurious upholstery
BRITISH DESIGN AND MANUFACTURE.
CARS ON DEMONSTRATION AT THE MAIN TOWN OFFICE,


## THE CENTRAL GARAGE COMPANY



## SIR R. DENNIS IN SHANGHAI.

## British Vehicle Maker Touring The World.

The first head of a British motor construction eom-pany-and possibly the first such of any country-to tour the world in the development of his business, Six H. Raymond Jonnis spent some deys in Shanghai last month, leaving July 9 f. $r$ North (lisina to continue his tour, before leaving for other parts of the Eqst. Sir Raymond is co-founder and one of the managing directors of Dennis Bros, Ltd., of Guildford, England, one of the great industrios that did well-nigh as much toward winning the war as the men in the trenches and in recognition of that fact Sir Jaymond was revently awarded the K.B.E.


Sir Raymond Jenmis the British
Motor C'ar Manufarturer. Siw
Touring the Least in the interest
of his compering.

When you talk to fir laymond you lose all idea of there being a future for the motor truck; you realise that its day has already come: that it can do and is doing all that is wanted; that the man who is not cemerted to this syetem of houlago is simply out of date and so aloo is th. country that bas not rowds for trucks to oprate on. Sir Respond is rmaning a leng (hain of bemme agents romed the wordd, theroughly capable men who have to stitst? him that they kow thei jol and they we siven the a a of an Engineer from the I connis Works. So fer in his tome, Sir Raymond has appointed agents in Bombay, Konachi. Ridwal
 singatore (with doputs at knalal lampur. laxh tmit Penang, Batavia, Somataka and Homak He. Ro.l. Shanghai, he will have represk mation in Ilamhan, Ximhine 'Tientsin and l'eking


















Then there is the tervible congestion of the street
 dure the momber of velicles and relewe an army of erowed wonkmen fos: belter oerobstions

Another faint is !nor river. We were amazed. coming up to shanghat, at the tran ndou- legneth af bank Deropped bix decks, whares and shapulding worke. Siow. situated at thene placos are the commoneme mothont of haulaze is bey motor track.

 stomid come first. Roed development fir one thing is

 al: to thme, than ficight trains. It the. D) mon- [lamt at an example, although the railway ran into then ymath mot of their transpontation is dome la mokl-.

The Shanghai Fire Brigute has thee De.t.11- © in itse equipment, the Native (ity Brigute has one that ancther on ordar. Sir Raymond conplamomed the shanslail Brime.....












## NEW BOMBER IN U. S.

## Martin Creates Another Torpedo Type Plane
















## MOTOR CAR

## INSURANCE

THE COMPREHENSIVE POLICY
O1 1111

## ALLIANCE ASSURANCE

COMPANY, LIMITED
(ASSETS OVER £24,000,000)
Affords FULL COVER to Motorists,


LIABILITY TO THIRD PARTIES. DAMAGE TO, OR LOSS OF, CAR

(including lamp and accessories) by-
Collision or other Accident.
Fire, Lightning, Explosion or Self-Ignition, Robbery or Theft or any attempt Thereat, Malicious and Wilful Acts by any Persons.

## MEDICAL \& SURGICAL EXPENSES

## ADDITIONAL BENEFITS

Can be included in the Policy by Arrangement

## ABSOLUTE SECURITY

PROMPT AND LIBERAL SETTLEMENT OF ALL CLAIMS.

## JARDINE, MATHESON \& Co., Ltd., SHANGHAI,

TIENTSIN, PEKING, HANKOW, TSINGTAO

Motor Taxation and Importation.


## 



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I 1. Usu:all; the case with these oficial documents, it


 used on existing cars, will be admitted. but that parts of motor cars fit to be assembled into completes veliceles will be

 Is : formo it Bordeatux.

T'ires also seem to be prohibited, for they apparently
 'I'ho word "tire," howover, is not included in the official list.







 Renault chassis listed at 21,000 franes, plus a luxury tax,





 Mo'ror, but the following excerpt from an American marabzine is a sidelight from the outside:
 innomulale industry is meeting with all sorts of difficulties and is as yet hardly in production, although nearly a year and
 suistandiating this point, the Imerican agent for a car pro-
 France, who received his first car a fortnight ago, said that $\therefore$ I.ar Le linew this was the first car completed by the tilit.

## BELGIANS ARE PUSHING AHEAD

## Present Motor Output 50 percent of Pre-War Standeard,

The production of automebiles in the factories of Belgium has reached about 50 percent of the pre-wat output, says a rocent report by ['nited states Trads ('onnmissioner C. F. Herring of Prussels to the Burean of Fereign and Domestic Commerce. Howover, the Bolyian industry Mr. Heming states, is occupied more with repairing and rebuilding than with the construction of now cars, as the periodical public sales of automobiles recovered from Germany has forced this condition.

The number of garages in Belgium has almost tripled since 1914.

The total imports of passenger (arss and trucks ints) Begium during the month of Janmary wee sem. 3 , thi vehicles, valued at $42,696,119$ francs, the report states, only 10 percent boing from the United States. But despite the adverse exchange conditions, the American cars are being soen in increas numbers on tho streets of Pbun... Is. and Mr. Herring believes a considerable number of American electric: (an might bold then

The excellent paving in most of the Belgian cities and the general flamess of the combtry throughout flambers would be favorable factors, the commissioner believes. Of the Belgian builders, only one exhibited at the Paris show The model, according to Mr. Herring, caused considerable comment and was adad to have equalle: the hest of the American machines that were exhibited

The backwardness of the French indusin his bern : topice in preses liscolsmions and vallous dencons hone ban mentioned to atecomen for it. In this commention it is wall 1
 automobile industry in Jurope and did the largest export
 Fench taderins were struck hander los the wat than ams others, with the soception of thone of belemime 'Th.y hal
 of momitions in at dat and the mind. on 11 11 - 1115 . 14.













 cd only sluwly.
 LIGHT ELECTRIC


## MILBURN LIGHT ELECTRIC

The Car that has no Internal Combustion

 summer riding







Andersen, `lever $\overline{8}$ Co.. I. (d). SHANGHAI


Branches Throushous China

ver


## INSURANCE

Fire, Marine, Life,
Accident and Sickness.
Fidelity Guarantee
1.11

## MOTOR CARS

## Commercial Union

Assurance Company, Ltd.
Total funds exceed $£ 32,000,000$.
China Brankly ollice:
INION IBIIIAIIN(i.
4. The Burd. Shanghai.

## SULU SULTAN A MOTORIST.

Automobiles and Good Roads Change Philippine Life


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 hig fow-wow with Col. 'Hookey' Wallace, the American






 as pretty bed.

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 with what we found here in '98 and '99 when we learned by














 hat i:37) mathe whols r-G-t.ged, of which $1: 301$ were nell dorme the lear. Ot the total 1113 are motoreveles or

## CHINA'S COMMERCIAL DEVELOPMENT DEMANDS MOTOR TRUCKS <br> 

NASH trucks are made in one and two ton sizes, are easy to operate, have a minimum of fuel and oil consumption and are economical, dependable and money saving as a means of transportation. You nceal a NASH in your business. The first shipment will arrive soon- Yon may hate an uption wh wne mos.

Let us show You what Nash Motor Transportation Means in your Business Call or Write.

## Sole Agents for China

森WAH CHANG TRADING CORP.

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TELEPHONES
C. 461 \& C. 5312

CABLE ADDRESS
"WAH CHANG" SHANGHAI

VON H. SEES THE INVASION OF BERLIN












of this live


trieycles and they are ceming in through the canams ho. mse this year in biger momber then over before. 'That is whom goed roads have done for this countr?
 who enjors joy-riding, as in the far-allay bavan the picturne














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NORTH BRITISH AND
MERCANTILE INSURANCE CO.

## MOTOR CAR INSURANCE

MODERATE RATES
AND
COMPREHENSIVE CONDITIONS
iscluding
UNLIMITED THIRD PARTY LIABILITY.

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MOTOR CAR \& MOTOR CYCLE
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Perfect Weather, High Speeds Characterize Post War Revival


















 winner.



 an Nath, and land (irmutupe in a sumbern. The lime







 hour. 'The Nineteenth 100 m . p. h., Short Handicap oner





 Higher peeds came in the Fifth Liyhtning Short Handicap,







 Handicap with a Hillman third, the speed boing 66.2.5 miles 1.1 himer
 of the dy when lour -t:utere fonglit a eive-and-take bathle

## BRISCOE 5-Seater Cars Tls. 1,200

Why pay more when this famons car will give you every satisfaction. Guaranteed for one year and fitted with all Non-skid Over-Size Tyres, H T Magneto, Electric Starting and Lishting.

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Our next shipment will cost 50 per cent. more.
AUTO-PALACE COMPANY,

## Practical Motor Engineers

Renault Cars Michelin Tyres Diamond T Trucks

PHONE W. 465
SHANGHAI.

## Motor Touring In France.

## (r'milinuled firme I'ture Iol)






 and from itcere to Niere.



 exalwheme:












WHAT THE BRITISH MOTOR TAX MAY BRING




## GERIMAN CARS IN ENGLAND.

Seventy-three lmparted in Month of Mareh







# PQuGE 

The Mrost Beautiful Car in China


## 1920 Models in Stock

 6-55 LIMOUSINE,Seven Passenger.

6-55 TOWN CAR,<br>Seven Passenger.

## 6-42 GLENBROOK,

Five Passenger.

For Demonstration
and Particulars,
apply to
DONG CHONG BICYCLE CO.
shanghai
SHisment $1: 515$
Also Agents For
B.S.A. and Reading Standard Motorcycles

## U. S. TIRE PRICES MAY DROP.

Tendency for Lower Figures Shown in Marke'.

 , 1.













## Reading Your Car's Activities.



 indicator and electrolyte level indicator. The upper part

 ordinary ammoter acts. ]3ut below this scale there is another divided into three segments reading "three-quarters
 the engine is not rumning the pointer will occupy a position



 .1t the -ithe of hio lutle dial, and immediallely the litt Lemer




 there is the tire recold instrument, with a diai for each tire. Whan yem pand inew the on the left fremt whed. Nel the dial for that tire to zero. and each mile that tire travels will







 know "whether he was coming or going." But, on the wher hand. There He me hamembe inclined and the
 athay of infomation at tiefir finger tips.


A Large Stock Including 2－3 Seater Roadsters，5－7 Pass．Touring \＆Limousines We Handle The Best Makes Only－All Cars Are Fully Guaranteed Also a number of Motor Trucks in various capacitice ranging from $1 \frac{1}{2}$ to 312 Tom－

## Demonstrations Cheerfully Given

AUTO CASTLE SHANGHAI

Phone C． 402 228 Ave．Joffre

U．S．SHIP－BY－TRUCK WEEK．

National Observation in Honor of Motor Transportation．






 devises ant mean：

## 












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WINDSOR GLasSES
The Vogue in Eyewear
I．c！いう show how
bacomin！ 1 b bol WINIOSORS are．
We supply all hands of spectactes：

Sin！（1．15…
（1いいい。）
141.1

 Brambes

## CHINESE OPTICAL COMPANY

11．．．l whe P352 Nanking Road．Shanghal． Teleplone C $3+95$.

BUYERS＇REFERENCE GUIDE PAGE 88

THE NEW "WRINKLES" IN ACCESSORIES.




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$\qquad$ 2-1.







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 l'U. U. S. A.


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THE GRAND GARAGE FRANCAIS is ()wned and (1peraterl in Mr. Philippe Osterberger who is well-known to the Motorists of Shanghai, having been formerly Manager of the Motor Car Department of the Shanghai Horse Bazaar.

World's Speed Records Lowered. (Continued from Page 11)
into the ocean to extmgnish fla flames. Ho: plamed bu resume trials Woxnewty, but the a*ident (1) bia wor prevented. Inasmuch ate it would be impusithe 1 , miliz. the dectuk timing devien for distans: mon five mila.
 is of little import.







 boaring spring seat












FITS-U GLASSES IN TORICS

> AMBERS SMOKES

## MOTOR GOGGLES

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1. S Army Flier Went Up 33,000 Feet.







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Ammonement was mad membly in dien lonk that an astmbling flimt that will has: o (...| oit! |










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 the long-suffering gear box, stluggling with a fierce clutch, ame a ma: lly hatio th thang yrars two or the time
 has not some enterprising British manufacturer produced such a vehicle for private use? The only explanation that
 I am making large enough profits out of my


 of view, but, after all, the British are a conservative peoHe. Another advantage of the system is the ease with which the car can be electrically equipped. The only addi-
 dynamo can then be used as an engine stater. The dynamo
 luxurions car electric footwarmers, etc. The fitting of an

 heery ; in fact, I doult very much if their combined weights would exceed by more than a few pounds the total weight
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1-101 … 1 niti ..... Une mil! ponille dicultant ge that
 would be neerseary to keep the car in efficient running order.



 bolly. fiv. 11 it he In aboblately buctant of electricits, modern electrical machines are so reliable that they hardly ever 2lle mulle. and a momith! linit which neel not take

## ANNOUNCING THE DENNI'S MOTOR LORIRY AGENC'Y <br>  <br> SIR RAYMIOND DENNIS DUPING HIS RECENT VISIT TO SHANGHAI APPOINTED US AGENTS FOR CENTRAL CHINA <br> 2 and 3: TON LORRIES AND PASSENGER VEMICLES ARPIVING SHORTLY. <br> THE CHIMA CARAGE COMPANY. <br> <br> Phone C. 2403 <br> <br> Phone C. 2403 <br> <br> shanghal <br> <br> shanghal <br> <br> at Fonamew knan

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## MOTOR CARS, MOTOR CYCLES

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## GASOLENE ENGINES

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## AGENCIES WANTED

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CANADA TAKES UP FLYING

Seventeen Air Taxi Lines Formed in Dominion












 Hery duy possihility.




 in Tathbridge, one in Banff, and two in Vancouver
 panics. Mail carrying and distribution for depratment





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## There is Gas and Gas

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Lack of Entries Compels A. A. A. to Take Action

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 visit the Yellowstone come by automobile

## ITALY ENCOURAGES EXPORTS.

## Government Sets Percentage of Goods for Other Countries.
















## THE TASHEE <br> CIGARETTE

WILL BE A PLEASANT COMPANION TO YOU

WHETHER YOU ARE TRAVELLING
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## MOTOR TRUCKS SOLVE PROBLEM

U S Makers Carry on Despite Railway Strikes







 that 10 percent of the emplorees have been laid off. 'Tais


 the irtensive $u$ w of motor trucks. They have been the salvation of the industry at a time when the railraads could be ib ! - onded upon for ncthing. They are making reqular trips over long distances and are standing up splendidly under the














The... "tanufacturers are determined not to guit. The?







## VEEDOL SCORES AGAIN.

Italian Flier Adopted It for Rome to Tokyo Flight.

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## OVERLAND GAS ECONOMY WINS.

## California Run Brings Two Victories

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## PLANS FOR NEXT OLYMPIA.

December 4 A Probable Data of the Show,

The British Cycle and Motor-Cycle Manufacturers and Traders' Union are now busily, considering the details of the next Cycle and Motor-Cycle Exhibition at Olympia. At the next meeting the Management Committee of the Union will be asked to approve the holding of the Show from Nomday, November 29, to Saturday, December 4. It is pro. posed that the price of admission shall be rased to 2. (idt. Season tickets will probably be available at 12s. 6d., and one complimentary ticket sent to each bona-fide retail trader or firm in the United Kingdom.

## First U. S. Motor Car Sale

(Continned from Page 1 s .1
gact origin of the commercial car is somewhat onscome, - widence seems to favor Charles $S$. Woorls, a carrage builder of Chicago, as the first manufacturer. His cars were run by electricity.

By placing a panelled delivery body on a passenger car chassis, the Winton company, in 1899, produced a commercial car which was sold to the United States Post Office Department.

In the next few years there was a great development of electric, and in a lesser degree, steam trucks. Until 1906 the tremendons activity of the passenger car mannfacturers obscured the potentialities of the commercial vehicle, but in this year came general recogntition of the axrival of the motor truck. It may be said that at this time the manufacture of the commorcial car became a distinct hamoh of the industry.

There are now about 550 om mone vilicle mamufactumen in the United states, who with 6,789 concerns manufactur. ing some article used in the antomobite frade, (muplos mon than 830 , ofot) persons, hall as many as atre comploped hat a the railroads and approximatoly of pereemt at all the pephe ongaged in manufacturing and medranical imdtction of the


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JUST ARRIVED MOTOR NIECNICLES SHOOTING. AVIATION AND SUN GLASSES
 SHANGHAI OPTICAL Co.
f(b): NANKING t6OAO moni c lona

Every issue of THE ORIENTAL MOTOR contains a Buyer's Indes to advertised goods. This is for your convenience. See Page 88.

## A NEW "WRINKLE" IN OVERSEEING.

: Dirigible Will Assist in Colton Growing Region.




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For the first time in history, cotton growing will be





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 requirements. Built as the first dirigible used in this country for commercial purposes, the little airship, probably the smallest practicable dirigible ever construct.d. is mam lomen

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THE DICTOGRAPH FOR MOTOR CARS.





If your lorry breaks down on the Road YOU LOSE TIME.

When you fail to deliver your goods to time YOU LOSE BUSINESS and PRESTIGE.

That is the argument which compels every Go-ahead Business Man to INSIST on a

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## HOW UAX AND LEON LOOK TO THE CARTOONIST.





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## THE GAS FAIMINE-ANOTHER PHASE.

U. S. Producer Brings New Hope For The Future.

 the U. S. He silys that there will be "gasoline for you,


 they are hesitating to invest in motor cars for fear they will lias. to pray a dollaz or more a grallon for gasoline before (1.in). Nothing could be further from the facts, judging from what nearly every well-informed oil proxlucer says. Iliuh

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 iwo doilars a batmel, can make money, even with very small
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Wh' -anle whe more than twenty dollat- for the year. Jhat anoments to a little over a dolliur and a half a month
 "hen ran - 1 ph ton conder its relation to the rise in eversthing else.
1.1才- 1 , Mnhmiti and get all the joy we ath out of motoring, realizing gasoline conditions now are but temfom! !

## "RICH" AND "LEAN" MIXTURES.

 "to.11" mintum- I tich mixture is one with $f(x)$ great
 lean mivture in pro... -ate of less fuel than it should have for proper combustion

III (INC bich mixtum will cabluse onerheating of the - neme. (1) - $1!$ mothithe of a-M:tron accummlation and such other ills as pre-ignition, loss of power, lack of accelerative ability and loading up at low speeds.
 nam won rambere of the motom. In connection with this mproper operation there will be the familiar popping in the carburetor.
if courro. the at trmille cammot always be charged to incorrect mixture, but nine times out of ten such incorrect upration can be traced to it.

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# SOMETHING NEW IN MOTOR. CYCLES 

British Machine Has Magneto in Fly Wheel and no Carburetor.





 Mation s. L.n-lund.


The fir ...ent thet frame is stamper out of shect metal in fuo werton-. these being wedded together be means of a acmal joint extemding completely round the construction. Thu 1 wo prowes are riblacd and parallel a form whith givi- maximm: strongth and the ability to withstand thes must ectern road stresees. The engine is lowated in the
 with the Geat-hox as sepatate units, assi-ting to brace up Whe lower il he of the freme. whil-t at the same fime the two upper members of the frame form the petrol and oil compantments. Ica-sibility has been given crey

 any trouble. The spring fork mounting is made in two parts



 strengith of the construction being very great. The far


 and rear slock absorbers have rebound springe within the sliding telescopic tubes, so that the fullest amount of comfort is atomblat when niting of rough roads. Whil-t the wear of the satm- piromal an h hinge 1 points is minimized to at here extent lis the exmptimally wide and large bearings used. Tlle engine is of novel design ; it has a single air-

## THE 1920 HENDERSON 4-CYLINDER HAS ARRIVED



THIS 1920 MODEL IS THE PRODUCT OF EIGHT YEARS OF UNINTERRUPTED DEVELOPMENT OF FOUR-CYLINDER DESIGN

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cooled cylinder placed horizontally, the bore and strok haine 63.5 by $63.5 \mathrm{~m} . \mathrm{m}$., giving 216 c.c. At 1,900 revs. per min a total of 3 h.p. is developed, but the engine is gemally: rated as of 21 h.p. The cylinder and crank-rase are formen in one as a casting in iron, the cylinder hewd heing dateltable. The piston is of cast-iron and has two rings resting in a common sroove and held against mation hy prasims The crankshaft is of the single dise pathom whatime within a large phosphor-bronze bush in the flywheel side of the crankcase







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MOTORCYCLE
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## SHANGHAI

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FORD HITS HIGH MARK.
Production Reaches 4,300 Cars in One Day.





 of the strike, the company's production record, while never able again to reach that day's figure, hovered around the 3,510 mark. Despite this enomous output, Detroit dealers - n! tha-t in torritas! within som miles of thits cit! hatse wht their alloment and delixat of new Pords camot be promised before fall.

A BELGIAN CYCLE JOURNAL.

## La Moto" First in the Post War Field.

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 publication, which is published in Brussels, gives an indica-



## U. S. COTTON MILLS FOR DUNLOP.

Tio. Dimlup Rubber Company has decided to build new collen malls lan the I mitod hial and it in reportod thent








THE "MOBILE PUP" A SCOOTER.
Twenty Miles an Hour Speed is Obtained.
The "Mr, bile I'up" is the rather fanciful but deseriptive name of a motor scooter, manufactured ins England, which is being placed on sale in Shanghai by The (hina Mutual Trading Co. Orders have already been placed for the machine and its appearance on the streets of the city may be expected soon.


How, the" Moliter l'up" /anl,
'i'he engine has : position on the forwand whed amd is said to attam a peed of twenty miles all home, an well in being able to slacken down to a walking pace. The sconter is equipped with electric lights, has a perfect balance and easy control.




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## THE ORIENTAL MOTOR

C.IRS A NECESGITY IN (NANID).

Canada has decided that the passenger (a) is not at lusur hut a wilitarian vehiclo. which has an impmetant part int tie development of the Dominion.

This action is indicated in the adoption of the Dominion's Budget, in which the passenger car is no longer singled out as the cap sheaf luxury for maximum taxation. The former $7 \frac{1}{2}$ percent war excise tax on passenger cars and trucks is swept away and other changes made affecting the tariff on automotive business, which were regarder favorably by Canadians.

FRANCE SELLS 52,000 U. S. CARS
According to a statement made by the Minister of Finances, there have been sold

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52,000 of the 70,000 automobiles left by the American Ams in France. In ar sequence there are only 18,000 more to sell. According to the same authority all sales will have been completed by the end of the year.

In connection with this statement it should be moterl thit fre somise do la ligulidation, which in thee heriey rempmathe for the sale of arms : atomobbiles in fi:ance.
 volicles were lelt hehimd bo the lameman Expertitionary Forces. The chief of this





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Complete Iine in Stock from Spark Plugs to Tires
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## GARAGES

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Auto Castle C． 402
Auto Pa
402
Central Garage
W． 465
Central Garage Service Sta．W． 1521
China Garage Co．．．．．．．．．．．．．．．．．．．C． 2403
Dong Chong Service Station C． 1518
Eastern Garage．．．．．．．．．．．．．．．．．．．．．．C． 1159
Fei Lung Garage ．．．．．．．．．．．．．．．．．．．．．． 4133
Grand Garage Francais
C． 2781
Gt．Northern Garage Co．
N． 1463
W． 1234
Honigsberg Service Station W． 1135
Hudford Garage C． 322
N 2938
Shanghai Automobile Co．．．．．．．W．W． 933
Shanghai Horse Bazaar．．．．．．W． 1641
Star Garage
W． 197

## VULCANII！NG

Central Garage Co
Glover Bros．
Star Garage

INSURANCE，MOTOR CAR
－1．1•1．！

Pacific Motor Supply Co．
Squires－Bingham Co．
Co．．．．．．．．．．．．．．．．．．．．．．．．． 8
MOTOR CYCLE REPAIRS
Auto Palace Co．

Dons Chons
Fei Lung Company
Morimura Garage Co．
Repair Co
Wong Āh Zai．67

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## Union Ins．Society of Canton，Ltd．．．．．．．

 Wheelock \＆Co．Yangtsze Insurance Assn．Ltd

## OILS AND LUBRICANTS

## Koster Company

3 ril 1 lve
Mencarini \＆Co．
New York Lubricating Oil Co．Inillua Squires－Bingham Co．
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Chinese Optical Co．
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TRUCKING SERVICE
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MOTOR CYCLES
A．B．C．．．．．．．．．．．．．．．．Agents for
B．S．A．
Cleveland，
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## MOTOR CYCLE SUPPLIES

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Something more than oil

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I E....l. f.i .... is whe of movar

## How the Wrong Oil Wastes Power






The result is wonkened power:
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If the oil is too heavy in borly, it fails to maintain the proper oil film or to reach all friction points. Excess friction results with its attendant positer loas

Motorists find a safeguard against these power lonmen int the Vacruman Oil ('ompatas's Chart of Sutmmobile Recommembations. a eops of which will be -ent foll apon reguent.

Thar ('lowi hat heronme a alamdatil filite 10 ('anterl Latharalion.

Thee led" of the state of (iargoves Mohilonls -pwatierl for your car insures a perfect piston ring - -al.

The superior gmality or lubricating efliciency of 1 lue oil -peceitied ita ability to staml-up umber the heat of service, in too we!l known to neel liverussion.

The use of the correct grade of fiargople Mobiloils insures the maximum of power at all timen.

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THE

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 NE CBARANTEE 2,OOO MDLES MORE SERVICE EV RETREADING AT A FRACTIONAL COST OF NEW TRRESIllustration shows patterns of retreads.
ALL MAMES OF TIRES OF TUBES REPAIRED Vulcanizing a specialty

Estimules givon

## GLOVER BROS., Pbone W. 1979

 129^ BUBBLING WELi. SHANGHAI.


## THE GEAR BOX:

TMHE gear box of the Austin has center control with four forward speeds and reverse, ratios as follow:

| 4th (direct) | 3.93 to 1 |
| :---: | :---: |
| 3rd | 6.2 to 1 |
| 2nd | 9.7 to 1 |
| Ist | 17.0 to 1 |
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These ratios have been found to meet very adequately every condition of load and road. Speedometer drive is incorporated with the gear box, which has ball bearings for the shafts. The workmanship throughout maintains the high Austin standard.

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THE ORIENTAL MOTORCONTENTS-AUGUST, 1920.
Vol. II. Established April, 1919.

No. 5.

The Motor Car in Hankow ...
The Causes of Tire Trouble
America Flies to the Orient
Tientsin-Peking Road Begun
No Frame in This Car
Foochow Has Road Project
Editorial
It's" Worth its Length in Gold "
Sees Big Future for China
Japan Is Building Roads
Hongkong Air Club Established
Budd on a Flying Trip
Expand Automotive Department
Motor Imports in India
Air Currents
Omer Locklear Is Dead
Islands to Have Air Service
Famous Chinese Aviator Returns
Hudford Opens Assembling Plant
Notes from Here and There
A Magneto Substitməo
Eastern Grows Steadily
European Merger Announced
Prices and Specifications of American Passenger Cars
British Motor Specifications and Prices
Large Air Boat Launched ...
Detroit Has Bus Line
Motoring in Japan
Duesenbergs Take Uniontown Event
The Little Things About Your Car
First Car for Mussooric
U. S. May Build Zeppelins

Philippines Have 5,591 Motors
Shanghai's New Tire Repair Shop
Cars Gaining in Java
Left Hand Drive Opposed
No Worry About Gas
New Fiat Light Car

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## Akron-The Rubber City <br> Coaching Women Drivers

U. S. I92I Show Dates Set .. ..... (1)
Milburn Doubles Production this )(:.11 ..... 11
The New " Wrinkles" in Accessories ..... -
Making Y'our Car L.onh Ni"w ..... i:
Canada Second in Motors ..... is
New Features in 1920 Buicks ..... r.
To Makic (ian Tires ..... FI
May Was Big Momh ..... -
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Sopwith Invades China ..... 4
 ..... $\cdot \sqrt{4}$





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Strains and Stresses are the normal lot of the tyre. Its capacity to withstand them determines the length of its existence.

The quality demanded may best be described as a "reserve of strength" and it is just upon its reserve of strength that the Dunlop Solid Rubber Tyre has built up its wonderful reputation.

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## T其室

# ORLENTAに MOTOR 



## THE MOTOR CAR IN HANKOW．

Interior City Has Rapidly Increasing Population of Vehicies．





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 a stathling sped．

















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 C'ircuit.


 is an especially charming motor road. Being right on the northern bank of the langtze River, the Lincoln Highway of China, the Bund enables the motorists to view an attractive river vista and steamers and gunboats at anchor

 old wall of the ILankow native city that was pulled down for" the construction of a highway during the Manchu m-ime.
 been used merely for ricsha trattic. I section of it leading to the concessions was rebuilt in later years. But the highway as it whole, stretching from one extremity of Han-
 well. Only very little repair work has been done during the fan lew years. The overworked condition of the road can-

 ...l ansible for the upkeep of the road must be censured for illen |

 road in a motor car, although it is wide enougt km thon $\cdot \mathrm{H}$.










 is along the Peking-Hankow Rasiway and terminates al-
 route are found beautiful corn and vegetable fields with



 pleasme seekers more often frequent this route in mor.ग.
 sood macadmmized highway and is kept in excellent repair.


[n Hankow the number of licensed private cars is 144 ()f these twenty-nine cars are owned br Chinese. The first


 of Hankow, and a philanthropist interesting himself in the




nationalities, the first one being introduced by Mr. G. V. T. Marshall, Secretary of the British Municipal Council of H11日R








Chinese enterprise，the manager being Mr．Chow Shui－san， Mr．Chow is a Shanghai Chinese educated at St．John＇s University．He has studied motor engineering for five years，and knows the technical side of his business quite thoroughly．This garage is the sole agent in Hankow for many well known motor car necessities．Having an efficient repair service，a hire service，and selling all sundries pertaining to motoring，this Chinese company has most of the business of the City． The other garage is owned by a former car repairer who has a few second hand cars for hire．It also attends to repairs．Most of the cars in Hankow are of American makes，while only very few are British or French makes But more French cars seem to be coming to Hankow，there being here an agent for their sale．

Motor car owners in Hankow need pay licence fees only at the British Municipal Council in order to run their cars in any of the concessions．The Council charges $\$ 10.00$ per month for cars for hiring and $\$ 2.00$ per month for private cars．Besides these obligations，car owners have


Chow Shui－san，leading
（＇himese metorist af Ifantor．＂

Who arns riluratal int sit

John＇s University，Shanglai
 $\$ 6.00$ per month for hate（ars and stan）M以 quarlow hor privato cars．

The rates for hero ears in llamken are－ill at lavill







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Office were the first cars to emter the Chine－cit：of Ham－ kow．The wharf of the（hima Merehant－Steam Šavin－


A road in the British Sefllement．
 cessions．Consequently the Post Office truck has to visit







The British Innicipal Conncil，in its list of regulations




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## THE CAUSES OF TIRE TROUBLE

## Why They Do Not Wear As They Should for the Motorist.




M


 proper wearing service but few take into consideration that the tires, like other parts of any automotive vehicles, must be
 stitention. 'Too many owners and operators of motor cars
 until a blowont occurs, the tread wears off, or something -n monn. Then they blame the tire. Everyone who has
 lites-which only one out of every thousand persons riding in antomobiles hat.

114 . Il the ways that have been hit upon by careless motorists for ruining tires on the road, three may be accepted at -tandard-under-inflation, misalignment of wheel and heedlessness in driving. There are many other methods


 tion is probably the commonest cause for the early demise of is casing.


 human being, and (2) the inability of any laminated substance to resist disintegration when it is constantly flexed. The second premise may require elucidation. Fabric tires are built up of layers of cotton impregnated with and cemented together by rubber. So long as sufficient air pres-- mer i- mantamed in the tire to kerep it hatd umder the we igh of the ear them laters, or plies, remaire in pratepolly fixal alition to eateh other. When, howerer. the tire loses ail to suth an extent that it thattens appreciably on the ground the plies weave back and forth. The energy develreped by the weaving motion of the tire walls creates heat Whirh disimtermates the holding power of the fathre and rubber. As there is more heat generated in this way than los connate of the tire with the road -whate, it is a mistaken notion that tires should be slightly deflated on a hot day to allow for heat expansion. The air in properly inflated tires will expand somewhat under the influence of heat but the - No... heat gernerated hy rumning on soft tires is harmful.

Inotler fem in the lint of evils contingent upon unde:intlation, is the dantage likely to reant when a soft tire - lokes at hamp stone on other ham ohject in the road. It the impact the tife. heing insulticiently smported by the !nemolle of at! within it. bendi in and stretche= the inside
ply to such an extent that it is weakened or actnally broken. This constitutes a bruise, and bruises are the origin of the most mysterious blowouts. No mark is left on the tread, but the tire is damaged nonetheless, and it is only in matter of time before the fabric around the bruise is $\because$ weakened that it blows. Many supposedly defective tires are returned for adjustment because the! were damaged in this w? by a large stone or similar object.

The pressure in a tire should be based on the lond it carries. It is obvious that a 30 by 31 -inch tire, dewigned to support a static load of 500 pounds, will not stand up under double the load. Increasing the load gives the same effect as decreasing the pressure. So, when you put seven passengers in a three passenger car you are overloading the tires. In order not to damage them you really ought to increase the pressue beyond that which the tires are normally supposed to carry. This is impractical, so the best the owner can do is to avoid over-loading his car. The damage to a casing is considerably increased when an already underinflated tire is overloaded.

All cars are not fitted with tiren of the right size: soms are too small, small large enough and others larger than needed for a given ret of conditions. The bargest tires (an











 $\therefore$ Son:ld leaar.




















## AMERICA FLIES TO THE ORIENT

Avlation Hat irs Birth in the Far East







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 A-1 an and other mations west of the Pacific. American



 that the Orient first witnessed attempts at thying before the



 twente-five homded years ago, that this wooklen bind Hew.




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 navigation to the mutual advantage of their own comery (ail) the $11-1$ ait the wom?
 mevigation of the air that American built aircraft offer un-


 there national expositions this year evidenced the material


The flying machine has a tremendons advantage over







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hour: what would otherwiso mean al werk's trip in many parts of the Orient.

One of the American companies ready to enter the Fastem market is the Ieromatine llane if Motor ('monpany, of Kerpot, N.J. Twis or three typers of smali lly ing
 has now produced it 1 welve passonger emiser, modedod
 by the Allies and toe Amevican Xay during the war. It

 without a single fatality or serious accident. The
 the last word in overwater chaft.

Tho Boeing Airplane Company, of Seattle, Wawh,
 This company has arranged with the American Post Office dopartment to rum inn acrial mat ravice betwen hollt and Victoria, B.C., where the dranscontinental mail will bo

 dower mail packets.














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# TIENTSIN-PEKING ROAD BEGUN 

Loan for Construction Signed on June 15, Work Following.




















The Jom :

 ject without any further delay.
 rnt payable half yearly, and will be advanced in four

 have been hailt and opened to traffic, $\$ 50,000$ after 50
 ampletion of i.j kilometres of romb.

There tat di-tame of the gated is estimathed to les atrout
 roughly 40 feet. Tho surface will be divided into three
 fairways of 2.2 metres each. The center road will be con-
 minimum lire width while the side roads will be open to


 surface by the use of steam rollers. Motor care using the


 a, arding to their maker"s registration number, in addition I. the current muncipal licence and the initial registra-

 published in THE ORIENTAL JOTOR will be curvied out with only slight modifications, principal among which



 fesistance by refu-ing to sell.










 , wer which flet out hait. Two of thes will h. :ntital new and two will be reconstructed from bridges now in Hac. In addition to there matin -trutures. there will bee several small bridges and culverts according to the ultimate


 I.s and moder control genemally of the Peking Metropolitan Burean. Toll stations will be built near each end of the made in the vionity of Tientsin and Tung. road connects with the Peking-Tungchow Road.

The safety and comfort of the road is one of the
 three times does the road cross the railroad line, twica under bridges (once near 'Jientsin central and once near
 'There will be a few curves and no grades to hinder, the
 station, the length of which is short. The surveyors were? arofill b keel: to high eromad ower the satire route and I: alloid villates. 'The road prasere throngh only two villayes, where the present thoroughfare is exceptionall.


It is estimated that the road may be completed befor:




 tsin has hean active in giving every support possible to the


The Peking-Tientsin Road will connect two of the




# THE WINNERS AT INDIANAPOLIS ON MEMORIAL DAY. 

Right: Gaston Chevrolet at the wheel of his Momroe desigured bul his hrother Lomis and built in Indianapolis.

Below: The type of Ballot racers from France whech fimished secomd. fifth "end serernth '"




## NO FRAIME IN THIS CAR.

Lancia Company Arrives at a Novel Innovation.

For yoars fast designess have amed all reducing the height of the mean centre of gravity of the cat , and fon years also the difficulties of ohtaming sulticient wate and ground clearances, together with unhampered movement for the rear axle and transmission when the seats are lan down, have baffled their ams and stulified their efonets. 11, therefore, becomes at mathe for somm ammome when:
 sperifications for a desion in which bar boxly :actuall! lom me
 center of gravity.













 stiffens the body.
















[^25]Chines: Company Would Construel Highways for Bus Lines


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16.1. $\therefore 1: 1$ lin to. :
 Pembeir of mair labl in mila. stmare fies of sorime hii









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## WHEN THE U. S. CONGRESSMEN CAME TO SHANGHAI.





abont 10 miles of the :30 the ("mompany's motor (ant an permitted. There regutar motor amsibon- potco ame man-





 purchase more cars and lay additional roads. Thim? thousand dollars is to go to lay additional ronds, $\$ 20,000$ to purchase eight motor omnibuses, and $\$ 10,000$ to build anothes temnimu- station.

















 purtalion.





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 11.01 ' (1.) … いい! mas l membily












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[^26]
# The Oriental Motor 

Motoring Motor Cycling Aviation<br>A Monthly Publication Devoted to Motor Interests in Chima and the 1：U liat fiemealls<br>Founded April， 1919.<br><br>London Representatue © Cohave Naylor 36 Southamplon is

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Vol．II．
－H1N1，H11，II1，1～1 1920．
No． 5

## EDITORIAL．

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 ways and railways have their uncontestable fart in makiner
 mations，yet there is the fied of the motor truck which can


 as a mode of cargo cimrying are decidedly on the incraanr．

 facturers．



 thee fllture

I comparison in the development of the motor truck ratusportation field in China might be drawn by citing the








 muprlus and if the foreign firms and residents living in

 its moversal prossibilities．

## TlミF゙いい，K







 ismount of air，whether the alignment of the wheels is out on the man！other lithe thimes whith add－n mowh to the life or as tire．

 fi consuming interest to every motor owner who considers his dat ar a lutili！rehicle alld an imsestment．

The average motorist knows nothing whatsoever about hin tires．He mat he ahle to ratk empimes．hulrication，（arr－ buration or several other phases of motor activity with a dencre of anthorit！but when it comes to ther，in mine cases wll ol ten，he in in the slath．He will probably know that ha．has－シ̈tten－mans mile－ont of thi－set or may be he wont．He will probably remember some of the sales talk of the imdividual who put the tire on his car．lut so fis as intimate knowledge of what can be and should be done to Lreserve the life of the tire，that he hasn＇t got．
lirin ane a lmos e．ential part of every motor whicle， commercial or otherwise，and every motor owner owes it to－

 tires and lese expenditure for their initial cost and repair．

## ［＇SING THE DIMMERS．

II Ith the introduction and use of motor cars into a new field and territory there are many courtesies and＂safety

 lherally and figumatidy－muiance of the road in Shanghai is the non－use of the dimmers on the headlights at night．

A recent happening on the Woosung Road, near Shanghai, brings the necessity for the strict enforcement of this practice even more forcibly home. A new motor car driven on a trial trip, by an experienced driver was cousing down the river road on its way back to Shanghai. The night was dark and the only possibility of seeing the road was given by the headlights. On a certain section of the road, a car approached from the opposite direction with headlights glaring. The experienced driver dimmed his lights but those of the other car remained at full power preventing the driver from seeing the road. As a result he missed a hridge which he could not see and the car tumed turtle as it went down tha bank. Fortmately the passengers were thrown clear of the car ant no one was hurt. An inquisitive Chinese with a lantem connected with a leak in the gas tank of the upturned car and the story ended with that incident.

This constitute a graphic illustation of what call what will and what does happen when headlights are not dimmed at night. There is no possibility of the driver whose eyes are blinded by the powerful searchlights of seeing anything, much less his side of the road. Some moming the newspapere will camy as story of a motor car going ower the bank into Soochow Creek while negotiating the road approaching the Rubicon om account of non-the of dimmers There is an increasing amount of carlesmess in this respert and some one must pay the toll.

As in eeveral other ju-tances in similar mathers conneraed with the courteries of the mad and of the cal, the (himese are at the greatest fanit in the matem of beadighte Sime the law of the road to man! of them is the survival of the fittest, they have motor cals which are cither mot cogupment with dimmers or the combination for which the chanllewe hasn't had suffecient time (0) aseertain. IVibh the increas-
 alsewhere, some propaganda in the native lamgage is 品men 10 berome necessary to set these mathers aright

Infortumately, the uea of dimmers in shamehai in :






 gate of Her imdividatal drivem.







## THELHE (OMING IN.

To those who have looked with optimism and hope unan the motor future of China, the events of the past few months have come an an indication of what the nest ie: years will bring in the matter of development. They constitute a vindication of the biews of thone whe have looked forwad to the days to (ome and hate remain d unrutted in the gesterdays amd tu-lays of mmpomions prospect.

In this inate of THf: Olill:NTHE MoTOR :amomaced the invasion of the motor fietd of China lag several new comers-both motor cars and allied froduct. In this issine is atos) published plans for a pond ! moject whin it will give hope to every reader either those connected with the atutomotive industry or those whase internt it unery that of a well wisher and asm owter of a meten a: A ther!
 the larger cities of the interion.

In interview in this istue given at mex angle to the road project of China lye citing the example of the Lemtent states. Heretofore the majority of persons in China who hatre been imterested in the derelopmem in motne transportation projects and in the boilding of highwas hatse taken the view that the roads matat arme tirnt At incestigation of the sthation in Anerica gres a -hake of
 first and with their increase the necessity for improsed highways and a national system was realized.




 motoring eonditions and grood roads









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## IT'S "WORTH ITS LENGTH IN GOLD.

Khyber Pass Road is Gareway 10 India.





























 it may since have becom.
























- 1.atim.............

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

UNION'S
COMPREHENSIVE

# MOTOR CAR POLICY 

Covers at a moderate premium

THIRD PARTY LIABILITY WITHOUT LIMIT

And also fully indemnifics the Assured for

ACCIDENTAL DAMAGE

# UNION INSURANCE SOCIETY OF CANTON, LTD. 

Incorporated in Itongkong<br><br>Policies are issucd al the socicts:<br>HEAD OFFICE, Queen's Buildings, Hongkong<br><br>SHANGHAI, Union Building, No. 4, The Bund<br>HANKOW, Union Buildings, Tungting Road<br>TIENTSIN, No. 6 Victoria Road.

## SEES BIG FUTURE FOR CHINA.

Chalmers-Maxwell Representative Says Motors Will Bring Roads.










 Whod r








 Alo'tole in the field and said that with the trade so well







 Chamers. Mr. Meconaha will leave Shanghai on Augus





The He-rmy for thel Gratmes car has been placed with Whe 1, motal diarage Compans. The Chabmers has ereated
 (i) the immonetan of the fimmons "Hot Spot" manfold,
 -rwhe thet and which reducs oletating expenses materially.
 Shanghai Horse Bazaar and Motor Company, Ltd. The new monhel Mi:ixtills ate alis) eqmiped with the "Hot spot" and
 innition.

## JAPAN IS BUILDING ROADS.

## System is Divided into Five Classes in Development

'The 10 ad building impetus of the West has spread


 :1" 111 of highats wothin hew own loundaries. due to the

小 whem"...!.
 anif -mbll Mian-luria. These roads prase through towns and whayin edor? mole if 1 wo. except in the interior where

 lional, [refectural, district, city, town and village.

The mational roads extends from Tokio to the Great -hane at le. in lemadparters of amy divisions, to naval tations, to prefectural offices, and to the chief open ports. Fluc alas cummery then with each other.

The district, city and town roads are the many little connecting links which tie up the national and prefectural tomsis imh -rat -r-tom. They have no definite width
 (1) those urou which the coolie carts travel.

Fingmatim: s on thene roads wseed Ien $24,000,000$ yearly. It is understood that twice this amount will be expended during the curent year, and the coming of the automobile into such general use practically makes certain the commal "yncminme whthe then sars of as much as



Fewer Tire Troubles in Driving with Goodyear Cord Tires

MORE than duy other onc thing, tire trouble has been the bugbear of motoring. The puncture and the blowout have laid heays handicap on the motor since its inception Most of this tire trouble is the result of the old-time tire construction.
Some new construction, hased in a different princible Han that generally employed, wis urgently needed.
This new constraction hers been achieved in the Grodyean Cord Tire.

 The tire-body is built from several layers of parallel (on.
 other without interweave. Between each layer and around each cord is a gemerous insulation of tuick rubbr.

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 stress.

Whometh. (Gomtsowfianil/h.
 and recovers. The tire is not

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 bile.

## WHY

Have Your Hauling Done by Coolies, String-Carts and Wheel-Barrows?

## WHEN

The C.G.C. Truck Service Can Haul Your Cargo at Competitive Prices.


We are Now Hauling for Many of the Leading Firms in Shang-hai-Why not Let Us Do Yours?

# TIME IS MONEY SAVE IT 

## PHONE CENT. 2403

FOR ESTIMATES OR FURTHER INFORMATION



# THE C. G. C. TRUCK SERVICE IS AT YOUR DISPOSAL DAY OR NIGHT Operated by <br> <br> THE CHINA GARAGE COMPANY 

 <br> <br> THE CHINA GARAGE COMPANY}

21 FOOCHOW ROAD. SHANGHAL.

# HONGKONG AIR CLUB ESTABLISHED 

Volunteer Sky Force Among The Plans Projected

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1B Jinkee Road.
SOIE: AGENTS FOR CHINA
SHANGHAI.
Tel. Central 4932
PEKING, TIENTSIN, HANKOW, HONGKONG, DAIREN.


## BUDD ON A FLYING TRIP.

## Kisk Representative Making World Tour for Company




 bmong the most recent of thene to visit shanghai was J. (i




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Mr. Butd came to (hina from Anstratia and Sew Kear


 out the islame, which, becanse of excellent road conditions,




Fimulata he davelled to Singagere for a stop of fome

 and the North, but the revent unsettled conditions made that


From Shamghai Mr. Bhald stated south for Calcutta,

 fomber boskinge from Bombay to Naples allows foum days in ('allutta, Here dias in Rembay, and five dass in ('airo. from there on his passport reads: "Italy, switzerland,





# EXPAND AUTOMOTIVE DEPARTMENT. 

Gaston, williams \& Wigmore Plan for Foreign Fields.




 if int New lork report. Jy the new move the compan!

 11 18. lint13:...





 "ith headpuarters in the New York oflice. With them, aheads of deprimbents, will be 1). G. Roos, assistant ched Enginere of the focomobile Company of America; Seymour (i. Cole, formerly purchasing agent for the Cadillac and Fiat
 Wer of the American TBody Co. of Buftialo, and J. P. Roberts, :xpart manager of Studebaker Corp, of America. Roos will
 pantment, and loblorts the export antomotive department.

 ther the propresed expansion of the company. Gaston,
 previod and handled numerous accounts for the various Allied



 mandgers of all these divisions. The position of American antomotive exports will be the chief subject for discussion.

## MOTOR IMPORTS IN INDIA.

## U. S. Makers Still Hold Lead in Number Sent In.

 Wh er raphlly than exer. I mrime the months of April and Jume Hos tewer Hhan $3.11: 3$ cat- valued at lis.lol! hakhs, Were received, these figures comparing with 5.54 cars valued
 'I'he l'nited sitates continues to outdistance all competitors,
 if 16 in April and May, 1919. The namber of cars imported Homb lhe I niteal Kinglum wan i3ll. whereat in the cor-








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80.01 Rut . Momtumban. Shanglut. Phome (i i22

## AIR CURRENTS










The Handley l'age flying bats which have been a.in


 Ferm then demonstrated his contidence in aviation by circling

 (10. aviation in Peru un accoment of the necessity for contal communication in that country. Commercial aviation should develop very rapidly in Peru, owing to the fact that Hying boats can operate on ite great waterways without the necessity of instituting terminal aserodromes and emerg.m. landing grounds on is the cane whth lamd mandume


 at Tnverell, Amidale, and Glen Innes. The instuction - $m$ his guidance stipulate that the areas required should be 600
 have water supply: He is also asked to report upon the buildings that might be upon the areas recommended. Thes... steps are being taken with a view to establishing aerodromes
 mercial aviation.
 airplane at Amsterdam, with no wires and no cables. The wings are supported from longitudinal sleepers. It has a single $18.5 \mathrm{~h} . \mathrm{p}$. motor, with a speed of 106 miles per hour.
 of the machine and the weight of fuel.

The latest amalgamation in the motor and allied trades is that of the Airco Manufacturing Co. with the Birmingham Small irms Co.. Ltd. This amalgamation is of rather more than ordinary interest in the B.S.A. occupies a leading
 Airco Co. occupies a similar position in the aircraft industry In the latter trade a decline naturally took place when' peace was it arared, and until aviation is more firmly establi-hest more staiility will be secured by amalgamations such as the




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 devolopd and prints made from them. Lieutenants Austin athl II atan thon took the frethes and then emt to the.


 landing, developing and printing the pictures, taking off Lain and dropping the finished prints on the deck of the ship as it reached Gatun Iocks, was just 53 minutes.

 1 trat thelut lix) place at thent time agis. Whell (ienetal Chen Chiung-ming requested Li Kwong-fai, an aviator, to
 height of more than six thousand feet.

Comata have been let wo the Boeing diplane compall! of -entle to (amr oriental mail- to Vietoria to comect with liners at that port with postal matter received after the $-1 . a m e r s$ leave the port. The mail accruing between $\delta$ a.m. and : p.m (an be ont to reach the ship leavines Victoria at $\&$ p.m. The Boeing Company has just closed a contract with the government to build ten armored airplanes for : mblutar …s.m.

 the "Bangkok Times." The flight started, we are told, at

 -.mw. ditficulty and returned to Don Muang. It resumed
 4.:31: 3

The Nayy Aerial Corps at Yokosuka, Japan, expect to receive in October, a large dirigible measuring 170 feet in


 be equipped with machine-guns and bombing attachments.


## OMER LOCKLEAR IS DEAD

Fammus Amentan Stunt Fleer Killed by Crash iti California.







 (1)








































## ISLANDS TO HAVE AIR SERVICE.

## Philippine Council of State will Use American Planes.






 - C. neds m:te.

According to the plans ontlined, the Philippine govern-







I cahkgraphic message has been dispatched to Genoral
 ton, advising him of the l'hilippine govermment's intention

 ilusul-ur ulticcials.


 antial on-t to the gion moment tom the purchase of the machines will be l'esns 118,000 while the operating expenses for a year will be Pesos 268,000 .

## The All Standard cars

## VALUE and SERVICE

HIGH TIRE mileage
Low PETROL consumption.
Best BRITISH WORKMANSHIP
Specially Designed for
The OWNER DRIVER.

THE SHANGHAI (iARA(iF CONIPANY, ITD).
'THE STAR GARAGE
(Our Bubbling Well Ciarage)

THE EASTERN GARACE

MAIN SHOWROOM

## STAR GARAGE

THE FORD SPEED DEMON OF 1902.

$\qquad$
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FAIVIOUS CHINESE AVIATOR RETURNS.

## Tom Gunn Comes to Canton with Plans for Commercial Air Line.










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Dmoner the imponamonts in Chima, the palice system is


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## HUDFORD OPENS ASSEMBLING PLANT.

Hudford Garage Station Has Capacity of 150 Cars.

 owned and operated hy I)odse and Sevmour (C'hina) Ltd.,
 Fiovette, shanghai. During the early part of dugust fifty




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 and prolably in the Far Fist, with the possible exception of Ah. - I and E'razar phant which was opened recently in

 miblhinery and uther aids for Ford service and its plant com-
 Linited States.


Firestone Cord Tires are built in this gigantic factory which has a capacity of 20,000 tires daily.
The manufacturing methods of this efficient plant are studied by engineers from all parts of the world. They make possible the unusual value in Firestone Cord Tires-extra mileage and riding comfort. And the larger size of these tires adds dignity and elegance to the appearance of any car.

THE CENTRAL GARAGE Co.,

## NOTES FROM HERE AND THERE







 Jstmbutas




 trip. Ho was actompatmed by Mr: Halli! amb Ho joumey will be a combined business and homeguoon tour.
 Company have arrived in C'anton from Imerica. Tll! alr. now beins assembled by the Contimental Motom ( it (ame
 expereded that the motor bus semion wilt bexomi howth

 second floor, where the staff quaters were fommoly located.
 showroom which will be second to none in ('hinit.



 :ar- int the mear future.

 sellative of many widely-known accessory liness, is now
 Manila, Hongkong, Duteh East Indies and Singapure.
 March. He will leave Shanghai Amgust 19 for Manila.

 on which a large business is being done in Shanghai:
 Magnetos, Columbia Storage Batteries, Johnson ('urtain Windows ; The Corcoran Victor line; Fiafnir bearimss, ete.

 bimi limpore where he siated the primipal motor manu-


 is sad to have had ten years experience with a large con-

 lacently constructud hy Isao Kun has already proved ita

 11:atejonled fuma l'atotnatu to the British Concession in

 !1.1.1. 'lne (ivnhbana, which heretofore bas been the big
 I motor -imbhana is being held this month at Ipoh, F. M. s. by the Perak Motor Union, which will be open both to fathe- and gentlemen and in which there will he speed and diving tests.
 the registration for licenses of its motor population. Although

 Chauffeurs, up to the early part of August, only five owners
 licence fee is $\$ 72$ a jear for hire cars, $\$ 24$ for motor cars that are prixately owned, $s 2 t$ for motor cycles that are for hire, and $\$ 12$ for private motor cycles. The licence fee for a motor (r)le lriver is sis, and for at chatleur $\$ 10$.
'The Handley Page machine, which has for' some time heon griviner successiul demonstration flights in Calcutta, has just completed the first passenger tight from that city to Bombay. Over a distance of 1,200 miles, which were flown in 17 hours. hy day and night, the machine carried 10 people, includines Captain Clarke, the pilot, 3 mechanics and an
 Hers, amongst whom were some natives, expressed their de-

 "hole mblion- hate haral of dy ing but have never seen the
 woke up and attended to the comforts of the passengers,
 atiol-cidla

## A MAGNETO SUBSTITUTE

British Maser Pu's New Magniter on Market.









































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## WORLD AIR BOARD FORIMED.

## Test Flight for World Derby Soon.










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## Announcement

The Central Garage Company has the pleasure of Announcing that they have secured the Agency for

## CHALMERS MOTOR CARS



The Car with The Famous
"HOT SPOT AND RAM'S HORN" MANIFOLD
Chalmers was the first to adopt the "Hot Spot" Manifold, which is now recognized as the most efficient means of converting low grade gasoline into an ideal combustibe form. A Shipment of Seven-seaters now en route THE CENTRAL GARAGE COMPANY

Exclusive Agents for Central and North China

## EASTERN GROWS STEADILY.

Starting as a Hire Garage. Has Passed on to Full Equipment.



T

 Whish comtans the following: " Nothing stacellike success." There is that fascinating something about the steady growth of an industrial enterprise which elicits the. Emteres of the math of ramband the lity mon dilie.





One of the best examples of such pioneering and


 this grage has grown steadily until now it occulies a place at the forefront with the principal industries of its kind in the teritory.

The Eastern Garage Company was organized in 1913 by its present manager, Colin Campbell, as a hire car service and occupied a small building of Szechuen Road, next door to the I. M. C. A. After the establishment, Mr. Camphell brought Capt. J. E. Inch into association with himself in the firm. Success came with its
 the site of the present building was occupied. Upon the occupation of this buikding, the company turned its atten-

 1h.. wincies for the Indian motorcycle and the Maxwell motor cars. Later the Hupmobile ageney for this territory was obtained and since that time, the Eastern has

 completed in Julr, 1915. This plant was destroyed by fire



Storage and Display Depurfments. Virstern fiaroge.
proof, concrete and steel structure which is now occupied by the garage.

The present plant is a two storey structure with a wide front, giving space for an ample showroom of modern design for the exhibition of cars and also for tires and accessories. The space to the right of the entrance is orempied bu the general offices and the offere of the manasem

The ground floor is given over to stomage space, with private stalls, to the hire service department and to floor display purposes. At the rear is an elevator commerim: with the technical departments of the compam (1) Hn second floor. The entratere for His- elevater is from limen Ming Yuen Road, which emables the efliciont hamatline of cears without disturbing the activition of the ghand thom









 in the Far Wast.




 soon ats the plans ate perterted athed the rom-the tem in il










 litd., was an outgrowth of the Eastern (Garago Company,



 in its organization and development, must be given the


[^29] dambuine and methan al acenties in the Far Eant.



 1) wlopment, and has heen the director of the destinj... of the organization since its inception with continued and increasing success. As managing director be keeps in

 inspection and investigation last spring. According to his il ant plans, Captain Inch will probably make a anani trip some time during the coming winter.






Colin Campletl, the manager of the Eastern Gara.
 and bina for a momber it rome and is witele kown in
 the motor car. Previuus to the founding of the Eastern



ability and his belief in the development of China as a motor market.

Following the outbreak of the war just jast, Mr. Campbell, turning over to Captain J. E. Inch the direction of the Eastern, relinquished his position as manager and joined the British Army in 1917 for active service. During his war service he was stationed India, Fast Dfrict, and Siberia, returning to Shanghai in March of 1919. Upon his return, Mr. Campbell again assumed the active management of the Eastern.

Mr. Campbell combines an expert knowledge of the technical side of the automotive industry with a keen exerntive experience and is a man whom the trade in the Far East can well be proud of and emulate in his work.










## EUROPEAN MERGER ANNOUNCED

Sunbeam, Talbot and Darracq Join in New S. T. D. Company




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## PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER CARS

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| （5－6． | （6－32 3 x $\times.)_{1}^{3}$ | Delco | Delco | 129 | （3－5） | SS | 30－50 |  | 29．30 | ：39．50 |
| MOORE |  |  |  |  |  |  |  |  | 2．．） |  |
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STANDARD


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## HAUL BY TRUCK

## BRITISH MOTOR SPECIFICATIONS AND PRICES.







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|  | $\begin{aligned} & 490 \\ & 525 \\ & 550 \end{aligned}$ | SUNBEAM．6－cyl． 24 h．p．Chassis ．．． $\begin{array}{r}\text { 5－seater Touring } \\ \\ \text { Limousine ．．．} \\ \text { Lim }\end{array}$ | $\begin{aligned} & 1.12 .5 \\ & 1 .+1.0 \\ & 1.050 \end{aligned}$ |
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| ROLASS－POYCE．Gi－cyl． $11+\times 12140-50 \mathrm{~h} . \mathrm{p}$ ．Chassis．．． | 1，850 |  | $\therefore$ 品1 |
| Complete 2.500 to | 2.800 |  | －1： 2111 |
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| ROVER，Light Model．2－csl．\＆h．p．－seater | 230 |  | 1．311 |
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| Coupé | －5，0 |  | 1 －ін। |
|  |  | T－－seater If ouring ．．． | 1.980 |
| 5－seater Touring．．． | 1．600 |  | 1.1117 |
| STAFFORD． 4 －cyl（i9） 120 11．9 h．p．Chassis | 400 | 4－csl． 16 h．p． 5 －seater Touring | －，， |
| t－senter Touring | 495 | W．IVERLY．4－cyl． $76 \times 127$ 15 h．p．Chatisis | 17. |
| STANDARD．4－cyl． $62 \times 110.9 .5 \mathrm{~h} . \mathrm{p}$ ．Chassis | 505 | S－seater Tourins | 12 C |
| 2－seater | 545 |  | － $17 \%$ |
| STAR． 4 －eyl． $80 \times 15015.9$ h．p．Chassis | 500 | t－seater Touring．．． | 1：9\％ |
| 5－seater Touring | 750 | WOLSELEFY TEN．4－cyl． $10 \mathrm{~h} . \mathrm{p}$ ．Two sonter．．． | $\therefore 11$. |
| 4 －cyl． 20.1 h．p．Chassis ．．． | 675 | Three－seater | $\therefore$ ， |
| 5－seater Touring | 825 | Couper | cill |
| STOREY．4－cyl． $85 \times 13220 \mathrm{~h} . \mathrm{p} .5$－seater Touring | 700 | OL．SEL， | －1111 |
| 4－cyl．14．3 h．p．Chassis ．．． | 业示 | Sialoon | 1.000 |
| 2－4 seater Touring ．．．．．． | 600 |  | 1.1 \％ |
| STRAKER－SQUTRE．6－cyl． $80 \times 13020-25$ h．p．Chassis | 1，200 | lamblalet | 1．1711 |
| 4－seater Touring | 1，600 | （＇ойи＇ | 110 |
| SUNBEAM．4－cyl． $80 \times 15016$ h．p．Chassis | ¢5） |  | 110 |
| ，5－seater Touring | 1，125 | Two－seater＇ | 1.71 |
| Limonsine | 1，275 | F＇oll－seater | （ilin |

## The Motor Car in Hankow．

（Continued from I＇repe is
rodds．Besides limiting of the speed cams，the Aministra－ tion also strictly forbids the excessive use of horns．

The future possibilitios of the motor can trake in Han－ kow primarily depends on the development of good mats in and around the cits．Provincial authorities in this pror vince seem rather jnert in the constrution of highmals．whl nothing of the kind has been even lalked of has them．Theme is now in abcyame an ambitions sheme for the recon－ etruction or extension of a geater lankon in tla oul－

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## LARGE AIR BOAT LAUNCHED．

## Aeromarine Flier Has Capacity of 14 Passengers．










The＂


















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## THE START OF THE LONDON EDINBURGH RUN


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DETROIT HAS BUS LINE.

Intmal Unar of Moror Transpart Etarts in Junc.

















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## The Causes of Tire Trouble
















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## MOTORING IN IAPAN.

## An ixplamation of the System of licenses






























 Quen - |r Don-itute a licence for the car as well as the number. Hore

















 tricts up to a little over 200 yen on a high-powered car in


 building of now highwers.

## DUESENBERGS TAKE UNIONTOWN EVENT

## First Four Flaces Annexed in U. S. Race.



 24". minthe. the ontire distance. I Monroe finished fifth,












 pols 10 the foul lap, but with I onvis Chevrolet in charge the

 contenders with the Dnesenberg team until engine trouble
 times the pilots averaging upward of 101 miles an hour.




 It 146 |11 1111 . .







 tencs captured what remained of the $\$ 14,000$ in prize



## THE LITTLE THINGS ABOUT YOUR CAR.

  
























































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Bs: painting the upper portion of the bulb of the trouble linn!1 witl some kind of opraque oil paint, glare will be
 whit ball in frem an 111\%?













 !muh imothin mit lime and should be in every tool box.


Before pencil was put to drafting paper: hefore an ingot was melted; the experience of twenty years was the great factor in ensuring the supremacy of the post-war Sunbeam. And now the Oriental Motorist will find that in the supreme Sunbeam his choice was wise and well-placed

## Exclusive Distributors

## THE CENTRAL GARAGE Co.



## HERE'S A "MADE IN.CHINA" BODY



- . 11 ! $1 / . / 1 /$ Invil $\quad$ I. 1 . II=, ". . . 11 d上 (1) 4tin....h.
 (1) 11.1. 1:i1 1.111 , I/1.1. 1....1.1.i.
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FIRST CAR FOR MUSSOOFIE

Pioneer Work is Being Conducted in Indian Hill Ciiry








 armiantillab




















U. S. MAY BUILD ZEPPELINS.

## German Representatives Seek to Interest Manufacturers.
















 prove is mesmentiles










 (1. 0 ons mais.
 with the longest experience in the making of brake linings, not only for automobiles but also for the heaviest industrial machinery, should be able to make the most dependable brake lining for your car. Ask your garage man or dealer.
$\qquad$

## PHILIPPINES HAVE 5.591 MOTORS

First Class Roads Thal 4.400 Kilometers, With Many More Second Class.





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 of everyone from the Governor-General down. Visiting





 towns in the Far Fast, and lack of Zamboanga an empire (maty timbertand, luxuriant with growth, overlaying untold mineral depo-its and accessible, in many districts, by sur-



## TANKING" NEW FORM OF JOY RIDE.


 Suyy iden with great success. The new thriller at a seaside owort in Congud canics 32 parsengers on top and 8 inside.


Postage 12 cts. per $1 \%$.

$$
\begin{aligned}
& \text { 1'viw mill. } \\
& \text { G. } \$ 2.85
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$$

All sizes at proportional prices.

ALSO A COMPLETE LINE OF ACCESSORIES AT LOWEST U S PRIOES MONTGOMERY, WARD \& CO.

HEAN OHICZ IOK THI PAK tast

Establishend 1872.
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ShANGHAI'S NEW TIRE REPAIR SHOP.<br>Chave: Broher. Establiah Ex=hasive Repuir Service.











 sulu the Far Mant.








 subcerision, with the latest tools and machinery and is
 stomlard. Viulcanizing and tire treatments, such as the



The establishment of the first exclusive tire shop may

 faith of the Westerner in the future possibilities of Shanglaf sull 1 mon

## R.A.C. DEFINES "LIGHT CAR."


 Which has a culbic capacity (volume swept) not exceeding I Tho: In March last a car was defined (in contradistinc-
 lhow a heol.

## FEDERAL

## $31 / 2$ TON

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## LET US BUILD YOUR TRUCK BODIES

We handle Trucks only, therefore our whole time and attention is given to this one Branch of the Motor Industry.

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Chassis in stock in any capacity

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GARFORD
2 TON
TRUCK


1L $\quad$ O-

America Flies to the Orient.








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## 

 Wenne, New Jonk, [「S.A., welcomes correspondence with



There is no secret in the success of the "Karrier" ; it is just due to a unique policy in motor vehicle manufacture which never will tolerate the secondrate or next best.

The integrity of "Karrier" construction and design is based on this vehicle's unimpeachable quality. That is why the "Karrier" is known as the more than usual lorry.


A typical 4 -ton "KARRIER" lorry fitted with flat body. Note the commodious, weather-proof cab.
'The "KARRIER" is the mome than w-ual lome What hat made it so." Why the "Karrier" pelies of prochetion. which has ever recognised the fact that the success of the future depends on the sucose of tordal. 'That in win success and keep it, you must give something better than the next best. That quality must be the deciding factor in the selection of materials, in machinery, and worlshops: organisation, in assembling, erecting, testing and finishing. the best in everything must come first.

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KARRIER MOTORS, LTD.
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Fire, Marine, Life,
Accident and Sickness.
Fidelity Guarantee
(N1)
MOTOR CARS

## Commercial Union

Assurance Company, Ltd.
Total funds exceed $£ 32,000,000$.
(hina Branch office
INION BEII, IINC:
4, The Bund, Shamehai.

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All Makes of Spark Plugs
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Bulbs
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602-3 Thibet Road. Cor. Ave. Edward VII 'Phone C. 3804.

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## MOTOR CAR

## INSURANCE

THE COMPREHENSIVE POLICY

## ALLIANCE ASSURANCE

COMPANY, LIMITED
(ASSETS OVER E24.000,000)
Affords FULL COVER to Motorists, Townemak

## LIABILITY TO THIRD PARTIES.

 DAMAGE TO, OR LOSS OF, CAR

Collision or other Accident. Fire, Lightning. Explosion or Self-Ignition, Robbery or Theft or any attempt Thereat, Malicious and Wifful Acts by any Persons.

## MEDICAL \& SURGICAL EXPENSES

## ADDITIONAL BENEFITS

Can be included in the Policy by Arrangement.

## ABSOLUTE SECURITY

## PROMPT AND LIBERAL SETTLEMENT OF ALL CLAIMS.

## Imasys

## JARDINE, MATHESON \& Co, Ltd., SHANGHAI.

TIENTSIN, PEKING, HANKOW, TSINGTAO,

THE CROSSLEY COMES TO TOWN.





STUDEBAKER OPENS NEW PLANT. Twenty Million Dollar Structure for Light Six.












 10n-

## ROLLS-ROYCE WORKERS RESUME



 conierence with the management. The men urge that




## CARS GAINING IN JAVA.

## Statistics Show Rapid Development in Passenger Motor and Trucks.

Jara is offering an increasingly good maket for motor care, passenger and freight, and tires, if statistics taken for the first quarter of the year of 1920 , mas he assumed to be accurate. In passenger cars and in trucke the makers of the United States seem to hold an undisputed sway, while Japan is leading in the motns tire field.

The following statistics, showing the importation during the month of March of this year as compared with the same month of last year, and for the first quarter of both 1919 and 1920, give an iudication of tha progress heing made :

IMPORTS OF' MOTOR-CARS, TRI:CKS INI) TIPIViS IN JAVA.

| MOTOR CARS. | March |  | 3 Months |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1919 | 1920 | 1919 | 1921 |
| from <br> Holland | No. | No. | No. | No. |
| United Kingdom | - | $\because$ | - | 9 |
| Canada | - | 6 |  | 58 |
| U. S. A. | 44 | $\because 81$ | 377 | 617 |
| from elsewhere | - | 1 | 1 | $\stackrel{\square}{4}$ |
| Total | 47 | 29 | 381 | 761 |
| MOTOR TRUCKS. | No. | No. | No. | No. |
| Holland | - | ${ }^{6}$ |  | I', |
| Canada |  | :3 | 1 | 11 |
| U. S. . 1. | 1.5 | 129 | 115 | $\because 1$ |
| Total | 15 | $1: 35$ | 119 | 217 |
| MOTOR TIRES <br> Molland |  | No. | No. | No. |
| United Kingdom | 315 | 193 | 18 si | 2, (1) |
| France | 3,744 | 115 | 7,989 | $\because 17$ |
| Canada | - | 82. | - | 1,129 |
| U. S. A. | 246 | 3,101 | 8,595 | $10,10.4$ |
| Singapore | 1,761 | 48, ${ }^{\text {a }}$ | 2,761 | 3,14:3 |
| Japan | 1.276 | 1.792 | 17,207. | 11.50 |
| Australia from elsewhere | 19 | $\because 11$ | 3, $\times 1$ | 51 |
| Total | $14.39 \%$ | 110.331 | $11.13: 36$ | 20. पा1: |

## GASTON CHEVROLET INAKES $\$ 36,500$.

Indianapolis Classic Pays Winner Well









## Oilburn LIGHAT ELECTRIC



## WHAT IS ITS INVESTMENT VALUE?

Consider that a Mihburn - Lorm of - Mater is live laar alld upolath

Consider also that its second-hand value
 price (an actual instance right in shatughai).





Andersen, Mever $\bar{C}$ Co.. I.Id.


Agents in Chimu



## THF FIVIOUS <br> NASH SIX <br> IN FINE MODELS

Two Passenger Roadster.
Four Passenger Sport IVodel, with wire wheels.

Seven Passenger Touring Car, with two disappearing auxilliary seats in tonneau.

Coupe, with windows lowered an epen car with permanent top, four passenger capacity

Sedan, windows lowered for pleasant weather driving, seven passenger capacity.

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Phones C. 461 \& C. 5312 cialile . Iflilion.

WAH CHANG". SHINGHAI.


Branches and Agencies in all Important Cries in China and Abrad

## LEFTnHAND DRIVEIOPPOSED.

England Does Not Like the Idea.





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16. - "




## MORELAND CPENS NEW PLANT









## No Frame in this Car.










 implowing the stahility, the road-holding qualities, and the



 What stops are to be talken to render the engine itself accessi-
 th inmif these lines would be very materially less than



## RENAULT

CARS
1920 MODELS


 Iso a 3 -ton Remault Truck

 i.... obtamable.





We are now prepared to book orders and accept settlements.
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# THE AUTO PALACE CO., 362 Avenue Joffre, Tel. W. 465 

 OR SENNET FRERES, 24 Nanking Road, Tel. c. 965 1/so Agents for
# THE MICHELIN TYRE CO., France. 

NO WORRY ABOUT GAS.<br>Producer Says Shortage Nct To Bc Acute








































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A Large Stock Including 2-3 Seater Roadsters, 5-7 Pass. Touring \& Limousines We Handle The Best Makes Only-All Cars Are Fully Guaranteed Also a number of Motor Trucks in various capacities ranging from $1 \frac{1}{2}$ to $3!$ 'Ton-

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> AKRON-THE RUBBER CITY.

Firestone Community Has Schools, Parks and Clubs.

In a sechded place, away from direct wator and mail routes, in the state of Ohio, U. S. A., lies the city of Akron. Ten years ago its poputation was considerably leas Han
 Akron is recognized as the liteted growing (it) in the woths 1ts industries have expanded beyond the dreame of fances

The cily owes ite rematikable growh ha the immuman mubler plante which inave developed withim it - Iommed Jow hate of the rubber preduchs mamblactumed the wolld oner

 mions.

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LISBON REGISTERS 1,021 CARS.





## THE 6-42 GLENBROOK

I

l'arge mgione - have dowhopel a ciar that combines style, riding comfort and mehanical excellence herefore found only


The Glenbrook is powered with the new What Wehe -is mators, It -igmed ln l'aige engrineers and built in the Paige factory. 'I'his is the motor you have heard so much about. 'The new motor is truly a remarkable preseri foliis.

In briel the Glenbrook offers every advantage of the hish priced hish power fouringe car-and none of the disadyantaso.

## IN STOCK

Gleenbrook Town Car Limousines

## DONG CHONG BICYCLE Co.

## SHANGHAI


Also Agents For
B.S.A. and Reading Standard Motorcycles

## COACHING WOMEN DRIVERS

## Minneapolis Claims First Free School of Instructicn.













 practical mechanics of cars, and demonstrations of proper driving.





 dmochly the make of car which she use atme ohtain antriac 16 ont ihe demsonstrator providel and to gen over tmedtmical devils with an expert.
sinne of Une direct results of the conter have been the Abormig पp of many legal points regarding traffic regulations ant lublitis for at rikents and danate : a better understandHg of responsibilities and obligation of drivers both in cits and country, and the formulation of "commandments" to guide women motorists. These are the following

Do not window shop while driving.
Watch traffic carefully.
16. wint whect right of way from then.
for not jank at fire hydramto.
1 - Mambe to -ignal turn- at street interswetions.
I. . the proper hand.

It:meln the wattic officer-mbtat - What hee is there for.
1.ant the pecoliarstias of some car.
 sommen brivers.
! pait of mols scomen was -r abile for dneries which Lave indicuted, by thair variets and the seriousness of th.


Thltames 1t. ...sn: of the le.ture- it was fomet




 support of women's clubs, the local newspapers and the prith department.

## GRAND GARAGE FRANCAIS

Newly opened at 310 Ave. Joffre, Shanghai.

> Temporary Shops in rear at 17 Rue Bourgeat until completion of Main Garage Building, September 1st.

At present we can handle Repair Work only but when our building is completed we will have one of the best Equipped Establishments in China. Full details will appear in the September issue of this Magazine.

## CITROËN TORPEDO \& COUPE CARS HAVE ARRIVED. <br> Also Coming the Famous BRASIER and the Well-known DeDION BOUTON CARS.

THE GRAND GARAGE FRANCAIS is ()wned and ()peratui he Mr. Philippe Osterberger who is well-known to the Motorists of Shanghai, having been formerly Manager of the Motor Car Department of the Sianghai Homer Buatar:

## CURTISS OUT OF AIRPLANES?

May Cease Operations Because of Unfavorable Legislation.
(1. M. Keven, th: vier-presidont, ammmert in Nien

 meresal aireraft. All the plants exempt the (iothen (iis) plant will be closed. Work on replacomemt- Vow whe was ('urtiss deakers and distributers will contimus, how. Iom. If



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HERE'S A NEW TYPE OF JACK.









PLAIN OR ON PRESCRIPTION

KRYPTOKS \& CROOKES LENSES HIGH GRADE PRESCRIPTION WORK THE NATIONAL. OPTICAL. CO.

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ANNOUNCING FIRST OLASS HIRE SERVICE PHONE N. 940<br>Tlay Wah (iarage Company Complete line of<br>Accessories, Tires, Oils and Greases Repairs and Overhauling<br>North Szechuen Road, Cor. Tiendong Road, Shanghai

## NETHERLANDS GUTTA-PERCHA CO. SINGAPORERRUBBER WORKS <br>  MANUFACTURERS OF <br> Vulcanizing Compound, and Canvas Radiator Hose Rubber Matting Motor Pump Tubing Solid Tires

 17 MUSEUM ROAD. SHANGHAI.

## U. S. 1921 SHOW DATES SET.

New York Exhibition will Start the Series





 in. S 0 n









The traffic committee received reports indicating that
 This is the highest figure ever reported, comparing with 61 ,000 during April and 48,000 during March. The Cham-



Reports were that the traffic jam in the big cities had



The. Jomor Trowk (ommith... secommend that me mack
 senger car show. This report will go to the annual meeting for action.

 this trade was in thriving condition.

The Motor Fuels C'ommittee heard the recent reports

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 possible. Attention is called that if gasoline advances i;
 gralluns.
On eredits reports indicated that there had been some
 wave was receding. The chamber will vigorously oppmese


 ed that bauk action had indicated to dealers that terms of
 tat twon the prations This lume is mot regated as a


# MILBURN DOUBLES PRODUCTION THIS YEAR． 

Manufacturer of Electric Vehicles Takes Steps for Rapid Development．

Bocaus，of the growing popularity of the clectric vehicle，but more especially beause of the high character of its product，the Miburn Wagon Company of Toledo Ohio，which enjoyed an unusual expansion in 1919 has doubled its capacity and its output this year．

The Milburn not only makes the bodies for its own Milburn electric cars but it gets the benefit of quantity production in that it makes in large quantities high class bodies for other automobile manufacturing companies．

The development of its business has b：cn marked not only in the United States and Canada but abroad．Its export business，handled by the Automative Products Company of New York，has developed so rapidly that only ｜recently one week＇s foreign shipments，for example，includ－ ed cars to Sbanghai，Simgapore，Brazil，and England

Hardly a day passes that foreign representatives of some large intereste do not visit the big Tilthom Plant at Toledo．It has orders on ite books and is making regulap deliveries to China，Spain，Sweden，Now w，lamal ama a score of cther countrics

The quiet，noiselws qualition of the Xilharn Wedtrit．the fact that the car will go as fill on a single battery（lower as a person cayes to drive it in a day，the fact that it doce－n＇ need an expert to drive it，we qualition that have given the Milbum atgeat appeal mest only in dow Inted statem but throughout the world．

Other clements that how enterel into fhe grmine







## MOTOR FIGURES ARE INTERESTING DATA．







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10 years＇experience with a large concern in America is behind our work．
Charges very Reasonable．

## SHANGHAI VULCANIZING Co．

G． 346 Tiendong Road，Shanghai．
NORTH BRITISH
AND
MERCANTILE INSURANCE CO．
MOTOR CAR INSURANCE
mODERATE RATES
1．11
COMPREHENSIVE CONDITIONS
ハい11ハいい。
UNLIMITED THIRD PARTY LIABILITY

AGENTS ：－
E．D．SASSOON \＆Co．． 9 Jinkeo Rond
MANAGE：R
E．E．PARSONS， 12 Hankow Rond SHANGillal．

THE NEW "WRINKLES" IN ACCESSORIES.





















 (hant.r has has lla... t.llomg him hix !assoline milewge, the amount in the tank. the







# 6'Once A Customep <br> Always A Customer', 

MOTOR CARS, MOTORCYCLES
AND
MARINE ENGINES REPAIRED.
Highest Grade Work Only
Under Supervision of
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Expert in Ignition, Starting \& Lighting

## Shanghai Motor Repair $\mathcal{C o}^{2}$

SHANGHAI
11 Boone Road
'Phone N. 1951
Corner of Serward Road.


## New Fiat Light Car.

 "'ontimuert from P'atye cit"obtained by reason of a complaly mathmal comblation chamber.
 Which is so light and so steady that fors the limet fow minntis it is almost disconereting. limming a! . S1 mit.... an lume



















## OXY-ACETYLENE WELDING SERVICE-WHY?

## Because

1. Insutes ag.an=t long Shutdow 1 .
2. Saves the peces. Wedt, all Menats and whe Whate or wersh.
3. Prevent buynge ol New Pate

4. A Good Oxy-Acetylene Welder is an asset io a community.


Write or Phone to
China oxy-Acetylene Welding Works Office Phone., C. 1982. Shanghai I Yuen Ming Yuen Rd.

## BUYERS' REFERENCE GUIDE PAGE 96







## HOW THE AUSTIN PLANT LOOKS



MAKING YOUR CAR LOOK NEW.
There's Much to Know about Washing and Waxing



 of il phid and wax prolishes, which will give admimble results, If iley amoneil as tomeres.




















 Wastur an! Hew enpled agein-t the surface of that the water


 The ith a is tomost the mud or dint off the surface.


 from the pauels. The hoor should never be mashed while

 from the front, to keep moisture out of the mechanism.

 that sil an bomad on the bunly. it is be-t to treat them with *il butter or kerosene. The butter softens the deposit so that it may be wiped off easily: Kerosene should be applied


I fi:at plem: le amo that atl protadernalia, elothe, From_... homous shoms. The, ned in cleming the polished satmers are elfan thowelses heione you employ them. hlong- - ant penilarly lable to hase sand in them, even new whan They should be whshed out in warm wator before use.

## CANADA SECOND IN MOTORS．

## Dominion Stands Next United States in Manufacture of Motor Vehicles．

Ganada is now the scomal netion in the wond in the manufacture of attonotiles ：？well as in the number of（ans owned and the per caphita distribution，beine outamked only by the United States．As has already been pointed out in these columns，statistice（wmpiled ：how then on poroon in
 Canada it has been figured out by the Goodyexr Tire \＆
 persons．In Grat Britain are pron in very－lin owne a car，while the percentage in France is one to $112 \geq$ ，ons io
 Anstria and one to 5,309 in Rusial．


 America．Indeed，it js stated that（＇anada shmed all increased registration of thirleen pereent in 1919，（onterit being the banner province with a reqiनntion of 12 | ，Mill |
| :--- |

 Manitoba and Quebee rank in the ald bamed．What is more，it has loen extmaked the：the fotel（am dian pmedu－
 1519 figures．

In its moter plants distabuted in man！different－ction－
 15，（000）workers，it being（：1mation wom time te）that th：


 the year of $\$ 100,000,000$ ．The annual wages of j： $1-211$.
 That that combley is latgely imteret al，fors．Int the






## Hongkong Air Club Established













## WICHITA

 3 TON TRUCKS IN STOCK

Wichita Worm－Drive Construction A Big Feature

 of the horse－power to the rear－wheels This construction permits the secth of the

 いいいい。
Wl｜lll｜：shme deperdatale surya．

 ．．1 limal 小いい

## The Shanghai Horse Bazaar

nud
MOTOR COMPANY，LTD．
Tel．W． 1641.
36 Bubbling Well．
SHANGHAI．

NEW FEATURES IN 1920 BUICKS.
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How to Find a "Grouns" in a Simple W'ay.























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See Page 96.

TO MAKE GIANT TIRES.

Dunt p Will Narkel New Truck Pneumatics Soon.













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## The <br>  <br> 14 H.P. DE LUXE

$T$ HIS car, of both outward bzauty and inward excellence, is the demonstration of what combined engineering efforts and skill can produce. It is fundamentally sound, each component unit of its construction being produced by a firm of specialists in the manufacturing of that particular part alone.
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 the loads given in the adponing fable when inflated to the air pressures shown.


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## MAY WAS BIG MONTH

U. S. Makers See Bright Days Ahead for Motors.















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[^30]THE DICTOGRAPH SYSTEM OF INTERIOR TELEPHONES

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WHEN THE STARTER FAILS.

What To Do and Where To Do It.








 minals clomed and tightened. Then the cables themselves

 ".
 in pressing the starter pedal there is a whiring sound but
 he lrokion.

 miles an hour.

SOME SPEED TO THIS BOAT.


The 400 h.p. Sunbeam which recently set a record of $75{ }^{\circ} \mathrm{m} . \mathrm{p} . \mathrm{k}$ :

New Features in 1920 Buicks.
reontinured from I'ry" iH
poesible to build the tops and curtains to that they will inold their shape longer, look bettes at all times, and also afferd prefect frotection against the weather. Lissuthomplatio. hinges, trim rail and hod foteners axe all of imporen quality. A more serme me thod of hateming the ferly fombera has also been devised.

The handsome, huxurions, endowed makla Iow har and cirrespondingly more gracelal then the frevion- topr, without sucrificing interion hemed rom.

All solid wooden frames are covered entirely with atuminimu. The deons ate of heal ter comstrution, synar pattern, and somewhat wider. The windows are provided With the latest type of patent window adjustos and and k.p:

 greater riding comfort.


















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FAR EASTERN MANAGER.
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or WHEELOCK \& Co., French Bund.

## U．S．EXPORTS HAVE DECLINED．

## Toral Valuation for April $\$ 3.503,615$ Less Than March．













Anatyang the Apmb repat mone dozely reveals the fact


 ab anene nusmically over the March，1930，report，when it will be recalled 14，35\％cars were shipperd．Valuations， fonmong ame in fack af March which showed to the amoment （A）－ $1:$ Trap pata




 （10．I whil ：AX－hipped during the month of April，1919）



The real advance in expents can hest be revealed by

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 sl：2．－4．294．（other countries in the order of their purchases


 \＆．）．j4．70．j；－Irgentina，457，valued at $\$ 480,973$ ；British
 S．itis，9ati；Slain，431，valued at \＄5．30，535；Brazil，38， valued at \＆ 418,3699 ；Thumaly，270，valued at $\$ 348,904$

 \＄177，以！；China 178，valued at $\$ 184,217$ ；Chile，13心．

 Other contries not listed are reported as having received

 Anmerican commercial voliclas is Canada with 316 trucks to
 trucks received，valued at $\$ 586,116$ ．Other truck markets in their repretive order are：Mexico， 97 ，valued at





 is havinge received xiole machines valued at $\$ 9 \times 2,159$ ．

Whongh this rear＇s recond compares favorably in the Wajority of catse with that of April，1919，there are a few


 Whushan wevived none in April，1919，as compared with









It's "Worth its Length in Gold.
(Continued from Page 18.)
After :he: Khater triles sere beought under Pritish comfrol in 1879 Afridis were paid by the Britich to keep, the pass safe for travel. Col. Sir labert Wubluttos had gomaral charge of the district. He wrote a most instructive borok on "Eighteen Jears in the khyber." With his retirement in 1897 came a wase of fanaticiom. in which the Arridis attacked the pass, whose safety they were pladgud and had heen paid to ansure. The Britioh had sufficient warning of what was to combe to withdraw their gificers, and the Rhyber Rifles, composed of mative troops. barely besisted the lamatics. Ifter several monthe of possession by the Afridis the British sent an effective force into the district and regained it. The Khyber Rifles were then
 firm cont al of the pass has simee been hedd.










 as any other part of the pass.

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Notor car ludies imported into Australia now have
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MOTOR CARS IN CALCUTTA.


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 and the value of human like writter down ow : mmmem!



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AT THE STRAKER．SQUIRE WORKS




HAYNES HAS NEW FEATURES．

Wheelbase Increased and Other Changes Made．














 ment fer all moxlels．

NO PRIVATE MOTORING IN GERMANY．

Anconthy（o il mart from a well－kncwn British motorist．














May Was Big Month．
（Continued fiom．I＇ruge ong） ranance themselves＇，and the demand for cas：not only has not slumped，but has increased．

July and August will see new names and new（ars on the road from this district．The Wills－lice joh，the new Jincoln car，the Handley－Knight and the Jacepet will bo moving over the roads as will also the Friend being produced by the Friend Motors Corp．，at Pentiac，the Harroun and tha new Saxon．

Teports from steel centers indicate a conat mo incremin in output that angurs well for the industry，and make unn foresecn complications axiso the schedules will be riathent and the shortage of the first six ：momith，of late（ womme
 not over－comfident．They realize the futum ie prollematical and in the light of past eventy they will make mo pediedions defnitely．＇The consensus，however，is that with conditions
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BRITISH OUTPUT GROWINC．
Weekly Figures Show Increase in Production．


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## TRUCKS IN FRANCE．






# AMERICAN "ROAD OF LOVING HEARTS." 

Southern Hiphway Will Henor Memory of Late American Senator.


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 La lad hey pathfinding committees, named by the president

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 valuation and population of each of the countries through













 several insifections to determine the approximate location of


## WHAT WOULD YOU THINK？

He Just Wanted to be Sure that it Was．
Well，Read the Story，and Then Attach Your Own Moral．

They played a trick on an oil salesman in Brooklyn resently．There was a＂Dutchman＂that bes a motor boat on sheepshead Bay and the＂durn＂engine didn＂t＂put－ put＂more than half the time and some of the local talent told him that his oil was no good and that they would yond an cil calesman down to see him．They got this chrp who，by the way，was a cracker－jack in his line，and told him about this chap with the boat and posted him that the Dutchman was＂all wised up＂on the oil proposition， had written a lot of books and a whole lot of things．

The oil fellow went down and before the Dutchman got a chance to open his mouth the salesman gave him a half hour of the finest technical talk on oil that you ever heard－said gang being around to enjoy a lagh．

When the salesman man out of wind，the Dutchman got his chance to slip in 2 word，and all he said was
＂Vell，all I vont to know iss，iss de oil slippery
traffic to be served and the possibility of the route so selected being included in State systems ultimately to be taken over， constructed，and maintained by the itates through which they passed．

With slight modifications by boarde of directors and bes anmal meetings of the ansociations，the reporte of pathfinding committees were aceepted．The eost of inspection was borne by local commitiees on the basis of milenge．

The route of the lighway as mow designated bath pat finding commettees and accepted by boards of dicecton．

 through the eities of Frederickshme Richlomond，amt

 Greenville，and Anderson，Gouth Carolina；Athens and




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FINDS NEW GAS PROCESS.
American Builds Plant for New Extraction Venture.





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## THE 1921 GRAND PRIX.

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## TWO BRITISH SHOWS IN NOVEMBER.


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## PROTECTING THE SPEED DRIVERS



English motor tracks are now requiring all racing drivers to wear the helmet illustrated above. It has been worn for a number of years but was not compulsory as now.

## SOPWITH INVADES CHINA.

Cycles Come First with Cars to Follow.

It is interesting to know that the household name of Sopwith is not only confined to home waters. Products of the Sopwith Aviation and Engineering Co. have arrived in Shanghai, in the firm of the A. B. C. Motor Cycle, to be followed later by the A.B.C. Light Car.

The Engines, and component parts of these little mounts, are built under the same smpervision, and by the same men, who are responsible for the wonderfully successful Sopwith Aipplanes. Jemonstrations and cmpmitice re "Sopwith" productions cath be made to the shanghai


## ENFORCING THE LIMIT IN GREECE.

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A HILL CLIMB WITH THE MOTORCYCLES.

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 Iamon, the basard of 'lrade returns reveal that during the


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JAPANESE DESIGNS CYCLE CAR． Army Officer Also Has Turned Attention to Light Motor Car．

Wiith an altempt to comblime the silcoe．t woll fls motor cycle，Kumaze Hind，a Lieut．－（＇olonel in the Imperial











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Shanshai Automobile Co.

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## 

CAR IMPORT DUTIES IN SPAIN.
The import duty in Spain is now one peseta per kilo, for cars weighing not more than 1,000 kilos., and 1.20 pesetas for cars exceeding 1,000 kilos.

TWO MILLION BUS LINE
Plans for an appropriation of $\$ 2,000,000$ to establish a municipal bus line in Toledo are under consideration as furnishing a possible solution of the city's street car problem, which has occupied a prominent place in the public mind for the past several years.

## TWO NEW ONES ON FORD

Have you heard these? A man was accused of stealing a Ford. It was found hidden in his stable, and, caught redhanded, the presumed thief was asked to explain how it got there. "I didn't steal it," said he, indignantly. "I saw it standing in the street, patted its radiator, said 'what a nice little car you are,'. and the darned thing followed the home!" In Detroit, it is said that they call a Ford Lenin and Trotsky-two cranks and a revolution.

## TRICK

NEW ROADS FOR PENNSYLV'INI.I
It the close of the state administration now in office Pemnsylvania will have expended, during the four-year period, $\$ 125$, 000,000 and will possess 3500 miles of "primary highways." These rombe will he the most direct routes, will parallel the mail-roats, and will be reads to camp a:al road freight in emergencios.

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Dong Chong Bicycle Co
Fei Lung Company
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Honigsberg \& Co
Hudford Garage
Koster Company
May Wah Garage Co.
Montgomery, Ward \& Co.
Shanghai Garage Co., Ltd
Shanghai Horse Bazaar

## AUTOMOTIVE SUNDRIES

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Brilliant Lamp Co.
Continental I. \& E Co.
Montgomery. Ward \& Co.
Mustard \& Co.
Walkinson. Heywood \& Clark, Led
ELECTRICAL ENGINEERS
Andersen. Meyer \& Co., Ltd
Auto-Palace Company
China Garage Co
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Shanghai Horse Bazaar
Shanghai Garage Co.. Led.
Shanghai Motor Repair Co.

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Chma Garase Co. C. 2403
Dong Chong Service Station C. 1618
Eastern Gatage C. 1159
Fei Lung Garage ..................C. 4133
Grand Garage Francais........ C. 2781
Gt. Northern Garage Co. .... N. 1463
Hontasberf \& Co. Inc W. 1234
Honigsherfi Service Stations W. 1135 Hudford Garage ..................... C. 322
May Wah Garage Co. .............N. 940
Morimuxa Garage Co...............N. 2938
Shanghai Automobile Co...... W. 933
Shanghai Horse Elatar W. 1641
Star Ciarage
W. 197

## TRUCKING SERVICE

C G C. Trath Serviee
Central Garage Cu

## VULCANIZING

$\therefore 11$ [.4.1.
Central Garage Co.

- ;

Glover Bros.
Shanghai Vulcanizing Co. $\quad \therefore,:$
Star Garage

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Assurance Franco-Asiatique wi;
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21
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Eastern Garage
Fei Lung Company
. 31
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VACUUM OIL COMPANY, No. I, The Bund, Shanghai.


## THE

 ORIENTAL©utorime Huathon
Doror Cycling

A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT



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NUPERIB (2I ILITV AT A MODERA'E PIRICE

'Phone C. 3809 for a Demonstration

## THE CENTRAL GARAGE COMPANY

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British Hints in Steering and Brake Use
＂Ship By Truck＂


New U．S．Monoplane Design$\therefore$
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Quality is an old-fashioned term that has survived because it stands for something that no other word quite achieves.
Quality in tyres is the measure of their utility: quality in Dunlop Pneumatic tyres means good, honest service, which spells "satisfaction" to their users, and reflects to their credit.

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# THE <br> <br> ORLENTAL MOTOR 

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A Monthly Magazine deyoted to Motori Impriests in Chins ind tie Fin Eist Geverinliy:
VoL. II.
SHANGHAI, SEPTEMBER, 1920.
No. 6.

## CENTRAL CHINA'S MODEL ROAD

Shanghai-Woosung Highway Points Way to Future Development.




T












































It Hiven Thly




























form a smooth road surface giving access to one of the best motor highways in China to the residents of Shanghai.

The problem of the upkeep of the 1sad was solved hs General Lu early in the spong of 1920 when he conceived the plan of using the old toll road syotem. Shortly after its


A blind curve on Yangtszepoo Road.
conecption a toll gate was corted on the road just outside of the International seitlement and , s.hedule of tees formulated. These fies ale: one dollar Mexima trip or six dollars Mexiom it quater. licenses hame leen issued and plates are worn by most of the hire savice and mony of the pavate motor cars of shamgai

The highway connects with the Internatimal setthe ment of Shangha ly a junction with the Yangstopoo lowt and als, the Pingliang Roat, whish suns along the ontor
 The toll gate is located a short distance from the jumetion of the three rouds. The l'mgterepara Road is an axedlemt hignway, at all times being kept in repair by the Municipal Council, and with one exception a lind turn where fore son: merts and follows the siver just betore jeiming the shomghtiWaosung highway offers m: duficulties t.) the monotis
 runs along the side of the Whangmon livere until withon : shor distance of the Sibaghai bipli-1 ('alleser, "heoll "






graded as to make almost perfect draining and insure the surface from being washed away and injured by hard rains.
 the most modern trpe but -uch a desmiption cmot 1 . applied to the bridge which connects the highway with the Chinese village of Woosung. This bridge is of light stee] construction and so narrow that it can only be negotiated
 the buidge, however, are of sufficient length to permit motorists to se? Wha, hal the bight if wa and not re, heret





Parking Garden of Forts Hotel, Woosung.





 two plates in the shout ated. Whith in perhetp- one humblat








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## THE MOTOR CAR VERSUS THE WIND

Resistance Alone at 60 Miles an Hour Requires 44 Horsepower 10 Overcome.




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 dirertion, the relative velocity of the wind to the car is 60



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| $1 \cdot$ | $\therefore 1$. | $1 \cdots$ | 16. | 1 Hi, li- | 19.2 |














If the same man walking 4 miles per hour were facing a gale blowing 26 miles per hour, the relative velocity of the wind would be 30 miles per hour, and the man would be walking against a pressure of over 26 pounds This would be enough to make an appreciable difference in the ease of walking and he would readily notice it.

The resistance that the air interposes to the progress of the car is of two kinds. There is first the resistance that is caused loy striking the bank of air that is atways in front of the car, in other words, the wind resistance, and there is also the resistance that is caused by the friction of the air along the car. This second resistance is what is known as skin resistance. It is so small in relation to the wind resistance that it can be passed by unnoticed.

The ordinary type of passemger car or thut present: ab flat surface to the wind. In oblere worls, therer are sum "entranco lines" such as there are in abot for the purpose of opening an easy path into the fluid. 'Thus the winl resistance can be calculated directly from the total area of the plane surface which form the front surfaces of the car

This entering area is composed of the radiator, lamps, projectod surface of the fenders, windthicht, fromb inte. front edges of the wheels and whaterom msen maty ho on the

 tabulation shows the resistance per stutur lion ill difforn in
 number of pounds that the car hats to ormenme in thatim: al dificrent speeds.






the car would be 32 pounds, so that at double the speed the resistance has become four times as great. At 30 miles per hour, the resistance per square foot, as shown by the table, is about $4_{2}^{\frac{1}{2}} \mathrm{lbs}$. per square foot, and the resistance to the car has risen to i- pound-

At 60 miles an hour, or a mile a minute, which is the highest speed the average truxing car is capable of reaching, the resistance is 17.71 pounds per square foot, or for the car with 16 square feet front area, the resistance has risen to over 283 pounds continuous pressure. At the end of a mile, or 5,280 feet, the car has done $283 \times 5,280$, or $1,494,240$ fost pronds of work in one minute. As a horsepower is only 33,000 foot pounds of work in a minute, the horse-power required to overcome the resistance of the car alone amounts to $1,494,240$ divide. l l w 33,000 , or over 44 . In other words, it takes a $44-h \leadsto \ldots$ power engine to overcome the wind resistance alone at 60 miles an hour.

There is no wonder that when we haty mane ans trabeling at 160 mikes an form. (alace is takioll not to enter the wimt with at llat -mpare [n-tecl







## BRITISH MOTOR EXHIBITION DATES.





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## CIVIL TURN TO LONDON SHOW.

## Dlympa Aircraf Exhibution Indicates Commercial Development.




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Wrial mails having been estahlished between Fingland









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Powerfully engined, (apable of cancing some $1 \frac{1}{2}$ tons at a seed of well orer $100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. and withal of gatectul appearance, these machines open up a vista of aerial traffic such as was scarce dreamed of by the pioncers of flight, Whose memory is perpetuated in the remblable acompli-hmonts of the present day typo of machine.
 catered for in the exhibits of the Austin Motor Co., British
 Sopwith Triation (os, and others a and there are indiations: What the day is net fare distant when the price of - 11 d
 of car.




 ivelved.












The glories of the wonderful panorama unfolling itself beneat? as one reclines at case within, are well illustrated, and calcule: ted to stmulate the emthnsiasm of thone of the

 due to the combined exertions of the various firms of air-












# NEW FIND IN MOTORS 

















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In Fig. 4 is shown the completion of the charge stroke
 plying breather action the crankcase valve is held open during this stroke, and the air in the crankcase is therefore

 with the ordinary engine running with a partially close thmothe it is impmable firm ther fition on drats in a full


 tents of the cylinder up to full atmospleric pressure. The
 fouking natmil. … that om the. 1aturn or (olnpression stroke a smaller throttle charge is given as high a com-


[^32]
# FRANCE'S NATIONAL ROAD PLAN 

Post,War System to Follow Old Roman System

IN THIS TlME when the building of roads in Chima is being urged by both foreign and chincse advisers to the government and whon the germ of development is showing increased activity, THE ORIENTAL MOTOR foels that it is timely to present the present day highway plans of other nations. This is being done in order that some concrete idea may be gained as to the construction of highways in other lands, how they are laid out and other valuable features. One foreign adviser of China has recentIy advocated the construction of 30 , tric; milos of good roads so below is given what the French are now doing in a similar activity.

From the historic building in the liue de Seme at Paris built by a courtier of "Whe" boui-, when is housen the famous Bureau dos Ponts et Chaussees (Roads ant Tridges), there cmanates a whole now idoal procedur for the refection and upkeep of Frencly bouks delling the at of reconstruction to come.

The dotails in extenva have not as set heen fimed fown but generalities have been lined up and tho newly-convened French parliament and cabinet have presented al bill which will ultimately increase automobile registration fees which shall, in jate at least, provide the cosit of the own regime and ite oporations. It is proposed, too, that other forms of roads traffic than that of mechanical that lion whall pate its. share of the cost, which is in lime with the new i.teas of baxation which France is strmogling en hata to put inta
 Here is where politics enter, but it is what the lionllall tab bome politianes so it would ine prestmplime for tha amtomobntis. ber se lo (omplain

 Europe.
















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 steel bridges are being built over rivers, the most famm. 1 .

 France. In all more then three thousand road bridwes were destroyed by the invasion, or had been blown up for










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[^33]
# TRUCK TRANSPORTATION IN SHANGHAI. 

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## MOKANSHAN SOON TO HAVE ITS MOTOR ROAD.


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# The Oriental Moror 

Motoring Motor Cycling - Aviation<br> and Me I in Iow Gionnime<br>Foumded $A_{i p r i l} 1919$.<br>


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## NOTICE TO CONTRIBUTORS.

The Eitlar a.ll the pleaked at a'l ames to reccite photographs,
 this publiactum. It is amberstond that anatitations will not be paid for unlass remaneratuon has been shoulated and antansed for in udvance.

All correspondence should be addressed to the Editor, The Oriental Mutur. I we Honghong Road, Shanghai, China.

[^34]Rebistered at the Chmes Post Ohlec as a New-paper.

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## EDITORIAL.

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 the next ten years, the 20,000 additional miles of ratway






 tries, with cities and villuges so isolated that commerce




 than .f fin it il. whe have either visited or lived in the
 pussibilities can only be gained by an intimato knowledge of the country. The attitude of mind of the average manu-

 motur cars a year is that the market isn't worth cultivating.
 the other markets of the worlal are approaching a point of
 zhatis dimhyment.
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 inil 4 ung inf shlan it will do in the future.

With the establishment of a national highway system,




of what the possibilities are for passenger cars both of the public service and the private owned type

What is needed now is a campaign for good roads in China, an active campaign. This campaign should be oarried on by an expert who is familiar both with road construction and with propaganda and publicity. For every dollar spent in this way there will be a return of tens of dollars in profit in the future development of the country. The manufacturers or group of manufacturers of the West who see and seize this opportunity are the ones who are going to profit by their wisdom and business acumen. True the immediate returns are small but there is enough capital invested in the automotive industry of the world to make it turn its attention from the present to the future.

Another advantage which these makers would have would be that of an established reputation, for the chop or trade mark in China is a sacred thing. Once the name and make of a certain motor car is accepted in the nation as being of the highest quality of performance and service, the fortune of the maker in the future is unquestionable.

The financiers of the great nations of the world through their representative institution formed to give aid and assistance to China, the Intrenational Consortium, have realized the intrinsic value of good roads and have specified in their tentative plans that a highway program be a part of the general budget made up to dispose of anly foreign capital coming into the nation

Thomas W. Lamont, of J. P. Morgan and Co., the representative of the Consortium who recently visited the country, made the following statement in an interview published in a late New York newspaper :
"These proposals also made clear that it was not the aim of the consortium to concern itself with general enterprises in banking, industry or commerce. Rather it was to include with its scope only those basic enterprises-such, for instance, as the development of transportation systems, HIGHWAYS, reorganization of currency, etc.-which would serve to establish sounder economic conditions throughout China and thus form a firmer foundation for the encouragement of private initiative and trade.'

It would seem that it is the daty of the American. British and Luropean manufacturers of moton cars to siot closely in touch with those finatheial intereste of their commtry who are participating in the ('montiom in order for assure themedves that there will be adengate pronsions made for the national highway system and to offer to lend






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## MORE ABOUT DIMMERS.

It would seem that such a small thing as a dimmer would not be of sufficient importance to occupy long consideration but the constant, flagrant non-use of this device of safety has made necessary in Shanghai the conduction of a campaign for their employment. One editorial was devoted to this subject in the last issue of THE ORIENTAL MOTOR and there seems a necessity for the further discussion of the subject.

Nothing is more essential to safety in night driving than the dimmer. The driver who disregards the use of this device is laying himself constantly liable for the lives and safety of not only the passengers in his own motor car but also those in the cars which are constantly passing him. The glare of headlights in the eyes of an approaching driver will result in almost any movement of his car depending upon his temperament. He may stop or he may become excited and drive either into a ditch by the side of the road, a tree or come side-on into the offending car.

It is such a little thing that it should become second nature with the driver or chauffeur to switch down to the dimmers as soon as a car is seen approaching ahead. Every owner of a motor car owes it to his fellow owners to give and enforce such instructions to his chauffeur.

In a recent editorial in this publication, the example of a serious accident resulting from the non-use of dimmers was cited. There was no occasion for this but if the present disregard of safety in this respect contimes there will bee further and more serious aecidents which will prolally result in loss of life

## THE NEXT CLASS

## SOUND ADVICE FOR THE FAR EAST.

$W^{E}$ are in and of an era of good roads. Those who motor. like Caesar. have made them selves of this era a great part. The motor car has compelled the improvement of lownship roads. It has inspired counties to make large expenditures upon the next grade of roads above the township road. State highway departments have come into being to pave the more important highways of intrastate use. The next class. and the most important roads of all. are the great natonnal highways over which must flow in increasing volume the traffie of a continent. It must be a real national system. built by the nateon under a nathonal commission of broad monded men

DAVID JAMESON.<br>

# THE FIRST MOTOR CAR. 

William Murdoch Made First Steam Vehicle in 1784.



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 the motor boilt. The fimous engneer, James Wiatt, at
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 his uncle, C'aptain Vivian, soon set about building one which






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The boiler is a neatly-made square tank, the water is heated by a spirit lamp, the chmoey of which pass through We. Ambler: the rilmber is inserted alas ints the boiler,
 when mavera the picion. The platiorm. beam and pillar ame all of whet: the ather patis of stect, iron, and batas.


 In in of this firl. Kemen whmins. Milliam \ardoch, for he

 the first to use a pneumatic pump; he also produced
 well as many other improvements. But his fame has been avor-.haiswed loy that of danio of fr-mber ofrial influence.

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

## UNION'S

COMPREHENSIVE

## MOTOR CAR POLICY

Covers at a moderate premium

## THIRD PARTY LIABILITY WITHOUT LIMIT

And also fully indemnifies the Assured for
ACCIDENTAL DAMAGE

# UNION INSURANCE SOCIETY OF CANTON, LTD. 

(Incorporated in Hongkong)<br>Established 1835.<br>Policies are issued at the socicty's<br>HEAD OFFICE, Queen's Buildings, Hongkong.<br>And also at the following Branch Offices in China<br>SHANGHAI, Union Building, No. 4, The Bund.<br>HANKOW, Union Buildings, Tungting Road.<br>TIENTSIN, No. 6 Victoria Road.

## NOTES FROM HERE AND THERE

1. If Ihmash of Xion York sion teantly antreil in

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 a Clunese firm suad the strats Diotor Girnge 1.til.
 Gontract in reapeat of mon-delisery of two cars motroted for in Nusember, 1919, for delowery before the Chanese Ness
 dunager and conts.

F - Tuthil, prestent of the Thinll Spong Comprens of Cluctige, Is makng an intensive busthess that of the Fiar laat and will the in Chma withen a slumt thme. He phans (1) (ath on representatives and smaly trale combutum- in Hawan. Japan, Korea, Chana and Indas.

The polne department of Jukobana recenty annomeed that it will iosile to a lival ellterprise a fermite to operate (iin) leghe motor cars of the su-calted "baby athe" !! pe. These will carry pasmengelo at eis sell a mile, and will comprete with rashas.
 fab, as arture ehgheer on september 1. Me. Mexaly serval during the last year as chief of motor transportation for the

 of cars, laveng had comection with the lian ant oldomment.






 sul whltur tion uest tow wonde


 about one year and a half and is now on his way home. The


 sentative of Firestone tires in China, has returned from a anp thomgh Nonly flama and Manchuria. He reports a phowint and profitable tour with one exception, Harbin. The frow hlotend in the wh lor nearly everything, accordthe to M1. Hasw, ate exonthant. For an instance, porters Thuge -is 1.0110 1.11: a -16 le mank from the station to the tomel. a dastatioe of a fow hamded yards.
11. Whltown- Pirt liatern and South African
 Thuna ofl a kour of umbectum. He recently returned to Shanghan on Applember ! attor a trip to 'lientsin and leking W1t 11 ( Steller. (huna replesentative of the company. Vr Willamis will leame hof dapan about the 2.5th.

Rabph bont of the Dont Motor Car Company, who has

 the world moter marhel.

We understand that there will be over 500 different exhibitors at the forthcoming Motor Show, to be held at Whplat and the White (ity. It hat year's Olympic show there wore omat : wn inhblitur

If in lainald that the highest automobile excise tax *..r paid in the United States was collected from manufucturers in an 7 around Detroit. For the first four months
 ture of about $\$ 417,857,000$ by customers, was poured into


Wmid \. Kin ammed recently from the New York wfice of the With Chang Trading Corp. to join the Shanghai oftice as director of the automotive section. Before joining the local oftice, Mr. Kioo visited the factories represented If lha lirm in thins tom the phrpose of getting first hand information regarding their methods and sales systems. Prior to joining the Wiah Chang Corporation, Mr. Koo was in electric expert with the Prest-O-Lite Company of New louk. If. is a gradione of Massachlusetts Institute of 1. lemet...

William F. Potter, factory representative for a number of Lmerican manufacturers in the motor trades, recently
 1 lash. He represents the Aubum, Maibohm and Winton 1....th-10. ..... ('onhett trucks, Racine Horseshoe tires and



 I co.... - Isiatic Trading Conporation have taken the Auburn - an:




## PAIGE MAN IN CHINA.

Alfred 13 Peaecok Says Far East Matorian in in Healhy Contition



























[^35]
## NEW REGULATIONS FOR TOKIO.

## Traffic Limited to Certain Streets of City.















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These figures do not take into account private settle. mems. which are often made on the spot, and which are



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The Goodrich Adjustment Basis: Silvertown Cords, 7,000 Miles; Fabric Tires, 5,000 Miles.

## ADAPTING THE DEADLY TANK TO THE USES OF PEACE







## ANOTHER MOTOR DEBUT.

Shanghai Motor Corporation Joins Ranks of China Trade.


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 liofles and Haskell, attorneys. 'The capitalization of the













Wha - Well kmown to the shanghi motor trate. Showroms

 erection of one of the most modern garage and motor plants III H14. late 1an

Th. . wotor agr discion of the company will be under 4!.. Chat umathon of dapain li. L. Wiard, who has had much experience in the antomotive industry in the United -: In In addition to this experience, Captain Ward durBug the war itas on avint in in the French and American armies and was for some time attached to the British Royal Flying Corps. In 1907 Captain Ward assisted in designing The firt or made ty the Velie itstere-ts.
'the agencies which have been obtained by the corporation, all of which ara for the entire Far Eastern territory, include: the Jordan, Velie and Alsace motor cars, Titan and What ithen Momowns. Hant id and Tropical tires and a mompte lime of sumbrio an 1 accessortes.

## ITALY FACES GAS FAMINE.





#  <br> <br> "THE ALWAYS CAR" 

 <br> <br> "THE ALWAYS CAR"}

Always Ready<br>Always Reliable

Always Economical-Always Efficient
Always Lowest First Cost
Always Cheapest To Maintain
Always Easiest To Dispose Of 2nd Hand

> We have ALL MODELS IN STOCK TOURING-RUNABOUTS-SEDANS LANDAULETS-COUPELETS.

ALL WITH or WITHOUT ELECTRIC STARTERS.

## WE ALSO HAVE THE FORD 1-TON TRUCK

For 15-Passenger Bus Body or
To Carry 2,500 lbs. Merchandise
CALL ON US AND INSPECT THE CARS -or write us FOR LITERATURE - ENGLISH or CHINESE.
HUDFORD GARAGE
89.91 Rue Montauban SHANGHAI Phone C. 322

# MAPPING U. S. AIR ROUTES 

Commercial Aviation System Now Being Carelully Planned













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 al!lame is also being increasingly used for commercial
 mathmes in ambutwial une in (ialifornia anl fifty mote in
 Hying in Texas, where contracts have recently been let for :H.1aft for transporting surflies between cities and the vilfields. A ten-passenger airplane service is in operation between San Frencisco and Los Angeles, and a seaplaneexpress lines between Seattle and points in British C'alumbia will soon begin operation. The develofment of commercial flying is being farticularly promoted by the Manufacturers' Aircraft Association, which came into being in 1917. During the war this organization devoted itself to co-ordinating the efforts of its members in supplying the 1 imurnmult with airraft for military purposes. At prwat it is principally engaged in fostering and increasing all American companies in an effort to bring them to a productive basis. The work in which this Association is
 - Sos: loh H1, I: lel"

1. Educating the public in values of aircraft, inclusive
 motor efticiency, etc., and doing this by demonstrations of their speeds, by eliminating all "stunt" flying, and flying in which enters an unnecessary element of danger, such as whth flomg on flom- wive temathe where there is no lanctiner-field.
2. Working in connection with the Department of the Interior, Army, Navy, and Post-Office Departments, Sintw Hhemments, municipalities, chambers of commerce, i.wids of tiade, flying clubs (which number nearly one





 out on its thousand miles mapping tour it made its own fula. . nit the tolle...- - immhtid the interest which was

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BUY an atutomontile as son would hat a house. An alutomobite is a majur investment and a similar utility. Be sure to choose one that you can spend longr hours in without disoombort and without nerve strain. Be sure that it is built of good materials, strong and safe, that it is equipped with every convenience, and that its appearance will long be a credit to your practical good taste. 'The Cherrolet "FB 50" Touring Car has all these qualifications and in addition is rem economical to operate.

IF you like the distinctive in closed cars. you'll like the "FB +0" Sedan. Built into it, you will find a quality of dignified beauty, of unusual comfort and year-round convenience which you have undoubtedly associated with only the higher priced closed cars.
'This moxlel lill-. Whmite move for at



## H. S. HONIGSBERG \& CO., ING.

40 Bubblins Well Road, Shanstar

## ENGINE DESIGN REVOLUTIONIZED



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## BRITISH PETROL AND BENZOLE PRICES.




 Rengland and Wiate. In Ireland and Sicotland the prices
 1d. and in Ireland 3 d . more per gallon. An extra charge as the bate of the your cithon my the made for any quantity l.... than - galloms.


## THE NEW AND THE OLD IN MOTORDOM.



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## HISTORY OF AUTOMOBILE IGNITION.

Magneto Displaced Battery After 1905, but It Later Came Back.

The magnefo, for antomobite jenition, was mot nsed to
 time batteries, of the dry-eell type. Were ahmest miversalls
 ioperating low-tension symoms, with the su-called melke-itnd-





 athtomobile magneto's prinejples of oxemation were so litte





















 pregnable in the field of athomebile electric ignition.
 lighting of the asutombile cesused the magneto to lose ground
 $\therefore$ anmy and lighting dynamos were developed. Electric

 Although generally adopted by"American makers only within the latet five or six years. the eulvantages of electric lighting

 details to one well-known make of starting-lighting systems

 mission, the latter detail anticipating the maguetic gearshift awhen meny wata li,.


 mbation if trucks, airplathes, tractors, marine and station-




The one great disadrantage of the present-day ignition-

 every make of storage battery, generator or timer differs from another in one point or more of design.



Factory No. 2. - Devoted exclusively to 3: inch tires-capacity 16 , oon
a day. This new factory, with Factory No. I, gives Firestone a day. This new factory, with Factory No. I, gives Firestone largest tire capacity in the world.


The Firestone Rim Factory, devoted exclusively to Firestone Rims
 Canadian Factory. Firestonc Factory in Hamilton, Ont. Canada,
under construction Capacity of 3 , 50 , tires a day. The completion of this plant will facilitate prompt shipments abroad.


Thomsands of Firestone workers are slec, holders with al linamial
interest in giving every customer the beet work.

## Why Firestone is Giving Extra Value in Tires

FIRESTONE has built tires since the beginning of motor cars and trucks. Firestone has built factor ies that are visited and studied by industrial engineers from all over America and from other countries.
But the greatest factor in Firestone leadership is its man power. Year by year Firestone has been laying those foundations of man power and resources which are today bearing their biggest fruit in the low cost mileage.
Thousands of Firestone workers own stock in the company. Firestone Park is a unique and attractive home community; the clubhouse plays a real part in the daily life of these workers. The Firestone bank has thousands of depositors. The Firestone insurance fund protects every worker in the organization.

All of these reasons why Firestone can give more in the Cord Tíres, or Fabric Tires, or Truck Tires, or Tubes. Firestone attracts and holds the men who do things.
Their personal finaticial interest in every customer makes Firestone men save at every turn, to hold patron. age by giving milcage at lowest cost.

## THI CINTRAI (BARAGE CO.

## SHANGHAI

 China Garage Co., Sub Agents.
## CENTRAL. HAS NEW DEPARTMENT

Used Car Section Recently Established by Shanghai Firm





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## CHEVROLET LOWERS DIRT RECORD.








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## LICHT CAR IS VINDICATED

## Indianapolis Event Proves Stamina of Smaller Models.








 and that nothing like the speeds of previous years, when largit cars were allowed, would be attained.

But the small engine and the light weight ideas of the
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 Ihis means: that (iaston Chevrolet in his little Monroe camo

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But it was not only the winning car which performed
 Wh whe and amb! -1/a. Gor all of the car- Whath were in pros IN. - hay ior the test came through with wonderful success. I'he wimer went the entire distance without a tire change,
 When we think back on the races of other years and remem-

 cals uf excessive weight, we realize that in any kind of motor

 14 ten whaten in maluced.

Indianapulis should not lea regarded as merely a track Where the counury greatest automblile races are held: it should tho regrarded as a great testing laboratory where new dhassis can be tested under conditions more severe than tha... (t) which the car be subjected anywhere else. And
 lwen trimmphant. No longer will it be necessary to prove to the pulldic that in order to gret epeed and stamina in a



## KRUPPS NOW AUTO BUILDERS.

I'he Kupp works at Essen, upon which the German
 now tummactuing amtombile- and :gricultural macininery.

## THE LOOK TIN ELI TRADING CO. <br> MILLS BUILDING <br> SAN FRANCISCO, CAL., U. S. A. <br> GENERAL EXPORTERS OF AUTOMOBILES TRUCKS AND AUTOMOBILE SUPPLIES

All Orders Will Be Given Prompt Attention.
For Particulars
Please Apply To Our Exclusive Agents:
THE FRANCO-ASIATIC TRADING CO,
95 Rue Montauban,
SHANGHAI
Phone Cent. 2551.


> We Also Offer 5 TON U. S. ARMY STANDARD TRUCKS.

"HATTY" ARBUCKLE'S SENSATIONAL CAR.







That oir K :

ADVOCATE GAS SYSTEM RATIONING IN U. S.

Rethers Would Hase Onota Fixed Based on Local Automotive Activity


















































T
HE most Popular Car in America and the coming car in China.

Investigate at once as deliveries in China of this superior car will be 1 mited during the next few months.
And the superiority of the Nash Perfected Valve-in-Head Motor gives to the Sedan and Coupé the same quick responsiveness that it does to the touring car, roadster and sport model.
C. $\mathbf{4 4 6 1}$ \& C. 5312

## AIR CURRENTS

MOTORS SEA AND SKY

































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DISPENSING FORD SERVICE.

Hubles Garage Shangion Has M=1ern Awhorized Service.






## FIRESTONE'S SINGAPORE PLANS.

## Million Dollar Crude Rubber Plant to be Constructed.

A striking evidence of the colossal magnitude of the rubber industry is shown in the recent announcement that the Firestone Tire and Rubber Co. will this year require the labor of one hundred thousand persons to provide its crude rubber supply.

Plans of the Company, recently disclosed, call for the construction of a new million dollar crude rubber handling plant at Singapore, Straits Settlements. It will be the only factory of this kind owned and opersted by a rubber tire company. Immense savings in cleaning, conditioning and compressing crude rubber will follow as a consequence of Firestone's innovations at Singapore headquarters. Singapore, a city of three hundred and fifty thousand persons, is recognized as the crude rubber center of the world. Huge shipments of rubber leave this port in constantly increasing quantities.

Only a few years ago practically all the world's supply of rubber came from the wild plantations of Brazil, but today the cultivated variety from the Far East constitutes more than 90 percent of the crude rubber utilized by rubber companies.
succecled. His next step now has been that of service and the establishment of Ford "Authorized" arric: stations has begun in ali parts of the world.

One of the first in the Fire Last is that of the Hudford Gaage, Rue Montaban, Shanghai, Ford ropasmtatives for Central (hima. With characteristic forasht, D) doe and Sermow (flinat, Lid., the eperators of the grame have installed the complete sorvice at praticelly the same time the installations are progressing in the States.
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## DUGGAN VISITS SHANGHAI.

## Automotive Engineer in City on Tour of the Orient.

John Ross Duggan, lately of the New Zealand Field
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## PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER CARS

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## BRITISH MOTOR SPECIFICATIONS AND PRICES








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| PARNACOTT．2－cyl． $98 \times 9812-20$ h．p． 2 －seater | £300 | SCNBEJM．1－cyl． $80 \times 1.50$ If lop．Chassis | £930 |
| :---: | :---: | :---: | :---: |
| PHCENIX．4－cyl． $69 \times 10011.9$ h．p．Chassis | 395 | 5 －seater Touring | 1.225 |
| 3－seater | 450 | Limousine | 1.475 |
| RICHARDSON．2－cyl． $85 \times 858$－10 h．p．2－seater | 275 | SCNBE．IM．fi－cyl．－ 1 h．1．Chas－is | 1，21．5 |
| RILEY．4－cyl． $65.8 \times 11011$ h．p．Chassis | 585 | 5－seater Touring | 1，510 |
| 2 －seater | 620 | Limousine | 1．05 |
| 4－seater Touring．．． | 650 | SWIFT．1－cyl eis x $9010 \mathrm{~h} . \mathrm{p}$ ． 2 －scater | －，．0） |
| ROLLS－ROYCE．6－cyl． $114 \times 121$ 40－50 h．p．Chassis．．． | 2，000 | TALBOT．4－cyl． $101.5 \times 14025 \mathrm{~b} . \mathrm{p}$ ．Chassis | 1.200 |
| Complete 2，500 | 2，800 | （1－seater Touring | 1．5ッ） |
| ROVER．4－cyl． $75 \times 13012$ h．p．Chassis ．．．．－ | 615 | UNIC．4－cyl． 13 h．p．Chassis ．．．．．．．．．．． | 970 |
| 2 －seater <br> 5 －seater Touring | 735 775 | VARLEY－IVOODS． 4 －cyl． $69 \times 12012-22$ h．p．Chassis | 4：30 |
| ROVER，Light Model． 2 －cyl． 8 h．p． 2 －seater ．．． | 300 |  | 400 360 |
| RUSTON－HORNSBY． 4 －cyl． $80 \times 13016-20 \mathrm{~h} . \mathrm{p}$ ．Chassis 5 －seater Touring | 550 630 | （ Seater Touring | 1.950 |
| SINGER．4－cyl． $63 \times 8810 \mathrm{~h} . \mathrm{p} .2$－seater ．．．．．． | 500 | 4－cyl． 30 h．p．Chassis ．．． | 1．5101 |
| SIZAIRE－BERWICK．${ }^{\text {Coupé．．．}}$ 4－cyl． $95 \times 160$ 25－50 h．p． | 610 | VULCAN．4－cyl． $90 \times 13020$ h．p． 5 －seater Touring 4－cyl． 16 13．p． 5 －seater Touring | 1，000 |
| STAFFORD． 4 －cyl， $69 \times 12011.9$ h．p．Chassis ${ }^{\text {5 }}$－${ }^{\text {ceater Touring．．}}$ | 1,600 400 | WAYERLY．1－cyl． $76 \times 1: 271 . j$ h．p．Chatscis | 5111 |
| 4－seater Touring | 495 | 2 3－seater ${ }_{\text {5－seater Tourins．．．}}$ | 575 700 |
| STANDARD．4－cyl． $62 \times 1109.5 \mathrm{~h}$ ．p．${ }_{\text {Chassis }}^{\substack{\text { 2－seater }}} \ldots$ | 555 |  | 700 |
| 4－seater | 645 | 4－seater Touring．．． | 10.5 |
| STAR．4－cyl． $80 \times 15015.9$ h．p．Chassis | 750 | WOLSELEY TEN．4－cyl． 10 h．p．Two－seater．．． | 500 |
| 2－seater | 950 | Three－seater | この |
| 5 －seater Touring | 990 | Coupé | ¢111 |
| 4－cyl． 20.1 h．p．Chassis ．．． | 825 | WOLSELEY FIFTEEN．4．cyl． $80 \times 13015 \mathrm{~h} . \mathrm{p}$ ．Touring | 800 |
| 5 －seater Touring | 1，065 | Saloon | 1，000 |
| STOREY．4－cyl． $85 \times 13220$ h．p．5－seater Touring | 850 | WOLSELEY TITENTY．6－eyl． $20 \mathrm{h.p}$. Touring de luxe | 1.150 |
| 4 －cyl． 14.3 h．p．Chassis ．．．．．． | 650 | Landaulet | 1.400 |
| $2-4$ seater Touring | 750 | Coupé | 1．1．50 |
| STRAKER－SQUIRE．6－cyl． $80 \times 13020-25$ h．p．Chassis | 1，200 | ZEPHYR． 4 －cyl． $69 \times 13011.9$ h．p．Chassis | f（1） |
| 2 －seater | 1，600 | Two－seater | 470 |
| 4 －seater Touring | 1，650 | Four－seater | （）0 |

## France＇s National Road Plan．

（Continued from Page 13．）
the incorporation of variout short lengths of depromental highways as well as an absoption of a smoll proportion of communal roads into the higher classification．

2）＇The frovision of the application of new methods． of roud building comport with the new locomotion．＇Thit．（o） include maphatt vartous litu－lithice，penetration and mixed methods in an effort te find the ideal ronte beat sulted to the varied climatological eronditions of the combtry which run from those of the froyen north to the amone armi－ tropical conditions which obtain in Mowtersmion Framer

The Aational（iovermmeat is lo porede lomin ： follow：


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 900 million fratucs
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## CHINA NOW HAS MOTOR BANDITS．

## Cars Are Utilized in True Western Style for＂Get Away．

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## NEW FIRE ENGINE OF THE MOTOR TRACTOR TYPE



 T'he unteline consisls of a large steame






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## NEW DESIGN IN CARBURETERS.

\author{

- N:w Yorker Emoloys a Swirling Motion in His Invention.
}





























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 satmone the poppotionve of the foel matiore at all ait \# -






 31 mitlet duct is of prime importance. The current of air Growint the mixing chamber is directed toward the upper



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 to imbeane the apirating effect at the propei rate."



## SOME＂RATTLERS＂ARE CARS．

## fonding，and Elammatmg the Cause of N sises


















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 －Im， A strong scmewdriver will also do the trick by holding it


 then．






 Fither the hushings in the steering arm，or the bushinga in
 f．asme worm consilerably throngh a lack of oiling．New lath dimh bmy the wom，olu－will met com mmeh，wo！


 ant ．$t$ se 10 hold the doors tiylt while you drive．If that

 hil wer tal whathy－？all．







 1．0 n．．．：wif them．But finst see whether you have


Then rome of iowe i reat or a rattling drip－yan ate a



## ANNOUNCING THE SHANGHAI MOTORS CORP.

 With The Exclusive Far Eastern Agencies For :-CARS-jordan, Velie \& Alsace. TRUCKS ——itan \& Kleiber.TIRES ——Brunswick, Hartford \& Tropical.
ACCESSORIES - complete Line.
IMMEDIATE DELIVERY on Veite Models 34 \& 48. TIRES and ACCESSORIES in stock.


Main Office; 14 Canton Road Phone C. Service Depot; Vv 237 Lungmen Road-Phone W. 2004.

## U. S. USE OF MOTOR BUSES.

## Lins Operate With and if than stecet Car Competition.



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## STOUT TO BUILD IMETAL PLANES.

U. S. Engineer has Contract. from Navy Department.

II ill an fi. siont :1 Detront lechnical adviser to the aircmalt hourd during the war and former chief engineer of the airctaft division of the Packard Motor Car Co., has been

 In America. The action of the government is said to
 Imerica of the (ierman junior model, similar to the one
 whene to Philatelphia recently

The capacity of the planes ordered from the Stout linц月(iorman airplane carries six passengers. Like the German flone. the stout type will dispense with the external bracing of -rous :ud wires and intlammable woods, taking their


Sin $t$ Imeriman manufacturers of motor trucks can fur-





 when - ed is desired, the motor bus can be equipped with



## NOW FOR IMOTOR DIAGNOSIS.

Siethosespe Tells 'Heart Beats o? Engine and Paris.

 ibe ifall min





 altountl.
 chatant striving for perfection in automethile design and



 com (coll




















## BRITAIN NEAR SATURATION.

New York Report Says Dupisation of Orders Swelled Demand.











- . hitel reporta th lay lork rownls imbliate that a (omblination of causes is rapidly bringing the British market (w) its saturation point for the type of cars produced in British
 , 1.ar-. lor them. First, and in some ways the least impertant of these, is the fact that, however slowly, British makers aro beginning to make deliveries in more or less
 making progress, while all are doing something, however limited the total amount. This means the buyers of British cars are beginning to receive deliveries on orders
 been discovered, some people say, that a large number of the orders carried on many manufacturers' books are in fact duplicates of orders carried on the books
 "II" mat. kimwn. Watheat th buy only one P.1. and not one from each manufacturer. Having at length - rured delivery on one during the past few weeks, and-as others are beginning to get their cars too-finding the market for his unfulfilled options shrinking, the new owner at last





 uxw to pay a heavy tax for owning it, or for buying gasoline,
 he, and this is ascribed, too, as a cause for some of the reduced volume of business now being done, and for some of the positive contraction of business in sight.


## RUGGLES SELLS TO WILLYS.



 athil matume Mr. Willy. Who -14 teeds him. bought larfor Ioldmus in the company sex mal montis ago. This
 and fomalok lime Co.


## JUST THE CAR YOU WANT

THE minute you see Overland 4 you admire its fine appearance, its distinction in style and finish.

Ride in it a few miles and you admire all the more its unusual comfort-and, if you are driving, its lightness and ease of control.

No matter how rough the road, Overland three-point suspension springs protect you from jolts and jars. By lessening vibration they reduce the wear and tear on the calr. They combine the steadiness and buoyancy of a 130 -inch spring base with the fuel-saving qualities of a 100 -inch wheelbase.

LET US GIVE YOU A RIDE IN AN $\longrightarrow$ The Central Garage Co.

Exclusive Agents for Central China
2A. JINKEE ROAD, SHANGHAI.

Overland 4 is a light-weight car of proved economy. It cuts down operating and upkeep expense. In tests over 250,000 miles it demonstrated emphatically its low petrol consumption and high tire mileage.

Quality-in materials, design and work-manship-is the reason for these merits. It is apparent in the upholstery, the soft deep cushons, the divan springs. Jon so it in the car's equipment, which is complete from Auto-Lite Electric Starting and Lishting to Speedometer and Electric Horn.


## HARD WORK BRINGS SUCCESS.

C. W Nash Started Career as Cushion S:uffer




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 Nichigan, were instilled those typically American principles



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 cushion stuffer. And it is mharid that ine prese : : fin is
 the imbent of the fan ory superimtendent. His rine th the


 31. ©
 tion and increase production, but he became ? designer and atratos

 Charter IV. Aash was the man to be chosen. He assumed the promency of the company, and within a few rears he
 -mplatif upward conrec and never stopped until he had tran-tormeal at thratemed failure into a tremendons succers. In 1:91: Vr. A wh wa-mole president of The (ieneral Vater- Cosmpern

If that time Charles W. Nash had established a reputation as the Toment manmacturer in the antomshle industry, and the record he has made in volume production of value prombets hat phacel him in tirat rank.

Nways it hed been Mr. Nash's ambition to head a mamufacturing company of his own, and the opportunity c:ume in 1916 when he took over the factory of The Thomas B. Jeftery Company, organizing The Nash Motor Com-
 lowed the methods in which he long had been trained. He twok off his coat and went into the shops, overseeing every-


When the United States entered the world-war the automotive industry was called on for aid and so skillfully thad Mr. Xahtoranized his plant that for months prior to the signing of the armistic forty Nash Quads were shipped cvery day with precise regularity. During the last four months of the war Mr. Nash gave his entire time to the ancormoner in otatur of mbomering and production in 1he rearganized fovermment airraft department under the administration of John D. Ryan, Assistant Secretary of IIar


 - .alde: - +1 wilily ... clock-work. Almost simultanermsis


 ( ompla, to which orgmization he is contributing the ex-


## BRAkES last longer with Johns-Manville NON-BURN Asbestos Brake Lining

LONG before the day of the motor car there were thousands of brakes lined with JohnsManville Asbestos. For Johns-Manville brakelining experience started a quarter century ago by meeting the brake requirements of the heaviest industrial machinery.

So it is natural that today, in the automotive field, Johns-Manville Non-Burn Asbestos Brake Lining holds the supreme confidence of engineers.

First, because of the tremendous advantage in quality of material due to Johns-Manville's ownership of their own asbestos mines.

And second, because of the value of those long years of added experience in the many problems of weaving and manufacture.

Sound reasons, indeed, for extra durability and safety.

To the trade-Our dealer-protective policy assures you real trade protection. Write for details.
"THE SIGN OF WEARING BRAKES"


> Johns-Manville Serves in Conservation

## THE KOSTER CDMPANY

## San Francisco, California,

Exclusive Representatives for the Orient.

AEW TORA
ง. \& พา! 4
H.71

## THE LITTLE THINGS ABOUT YOUR CAR.





 -ll












 foug gron masa Many motorists, were they to examine the wheeds on their cars, would be sumprised to notice that their






 (h. at. walls to bulge, the motorist may know that trouble


 may lase mate it- woy domo le. tw.en the |-tom and the
 powbility should be taken into consideration, though more


1 Hene thal of clutch trouble in motor trucks for which



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In the engines having the thermosyphon system the


 and convelantly avelatiot


atenk "ype tho mol... of the leather or falric after having




 $1=$
 quantity of water gradually accumulates in the crank asee,




 miles, and for the lest lubricating results every 500 miles, in
 ramove the water, after which it may be used again.

II fen prasume on the - latter pealal fails to start the
 trouble: Weak battery, poor contact of the cables with the
 thomeh, - Whth tomble or tromble in the stoting melos. A

 the terminals be cleaned and tightened. The starting motor ifor-ho. tempe worl often (anse trable and in murch used starters the commutator may be worn. The starter switch umy sitk im imake - neh peor contact in 10 detiver little cur-
 stumid lint no cranking the spring of the starter shaft may be brokell.

I bamil hate downe hat serses as a jask and will lift almost any weight you can put upon it consists merelv of a *hort length of iron pipe of large enough diameter to receive 4 helt. han mot the nut that gan on the bolt. Simply -lip the imit. Wuth:1 mut atemal pari way on, down into the end of the piece of pipe, allowing the shoulder of the nut to rest on the top edge of the pipe, and your jack is made. Having set it in position, turn up the nut and this will back out the bolt,


 $\therefore$ provided.


# ＂GASOLINE ECONOMIZERS＂FRAUDS． 

Chemical Analysis Shows They Are Made of Colored Noth Balls















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 which is growing constantly：
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These proulucts are sold in liquid，powder，or tablet form，



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Thenelmatigatimen trouble．




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 two of moth balls and enter the industry．The profits are
 which is fairly attractive．

 true．Camphor is an expensive drug and，though man！

 moth halls are usually made of．Thus the disclamer serves If us．lul purpuse，it makes people think these things，though
 esinctly stating as much．

The infallible testimonial is relied on to establish the claims to wonderful performance．Many people write and



 Blay ，when and explicit and deal with the adjustment of





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## LET US BUILD YOUR TRUCK BODIES

We handle Trucks only, therefore our whole time and attention is given to this one Branch of the Motor Industry.

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FEDERAL
3 $1 / 2$ TON
TRUCK


## FOREIGN CAR PRICES IN ENGLAND

## An Interesting Comparison of Prices in Great Britain of Outside Makes.














Hoss pric. ate wilh woml wheel lrices with wire

FOl!D (C.S.A.). Chassis, with electric lighting and
Tourin! can .. $\quad$ starter... $\quad 2311$

10-15 h.p. 4 -seater ... ... 645
1.) 20) h.1. (han-ais ... ... 7.511
$20.30 \mathrm{~h} . \mathrm{p}$... ... . 120
20-30 h.p. (Sports) ... ... ... 1,020

HAYNES (C゙.S.A.). 25-30 b.p. seven passenger touring car... 1,22j
$\begin{array}{llrr}\text { Morting form-4eater } & \ldots & \ldots & 1,22.5 \\ \text { Four-seater saloon } & \ldots & \ldots & 1,480\end{array}$
$\begin{array}{llll}\text { Eour-seater saloon } & \ldots & \ldots & 1,480 \\ \text { Five-seater saloon... } & \ldots & \ldots & 1,570\end{array}$
[nterior Drive Limousine... $\quad . . . \quad 1,660$
$\begin{array}{rrr}\text { IIISPANO SUIZA (FR.ANCE). Chassis, 6-cyl. } 100 \text { by } & \\ 140 \text { (Approx.)... } 2,100\end{array}$
HOTCHKISS (FRANCE), $18.22 \mathrm{~h} . \mathrm{p}$. Chassis with dy-
namo lighting and self--hater (Including Import duty.)
1.075
111)

| 7-passenger Phæton | ... | $\ldots$ | 950 |
| :---: | :---: | :---: | :---: |
| t-1a-scthдer Apecrinter | $\ldots$ |  | 130 |
| Sulatn | ... |  | 1.275 |

Limousine ... ... ... . 1,550
Bove prices are with wood wheels. Price with wire wheels

HCPMOBILE (U.S.A.). 15-18 h.p. 5-seater Touring
(Prov.)... 795

lighting and starting... 575
[TALA (ITALY). 16-20 lı.p. Chassis ... ... ... 900
JORDAN (U.S.A.). 30 h.p. 5-seater Touring ... ... 1,065

1-water … $\ldots$.... 1,060

Landaulette... ... ... 1,275
111-menther .. ... 1,250

-     - antier ... ... 1,050



Clandard Touring, 5-seater $\quad$... 750
Sports model (English body) ... 875
Two-seat.. .. .. ... 825
Eive-seater. .. .. ... 875
MAXWELL (U.S.A.). 5-seater touring ... ... 560

|  | ¢990 1,185 |
| :---: | :---: |
| MOON（U．S．A．）． 20 h．p． 5 －seater | 885 |
| MORRISS－LONDON（U．S．A．）．Chassis | 325 |
| 2 rir 4－seater | 475 |
| （Plus surcharge according to Duty and Exchange tions．） | condi－ |
| MORS． $20 \mathrm{h.p}$ ．Chassis | 1，100 |
| MOTOBLOC（FRANCE）． 15 h．p．Chassis（Prov．） | 740 |
| 4 －seater（Prov．） | 910 |
| NASH（U．S．A）．5－seater（Prov．）．．． | 800 |
| 7 －seater | 890 |
| OLDSMOBILE（U．S．A．）． 5 －seater Touring | 900 |
| OVERLAND（U．S．A．）， 5 －seater Touring Model | 495 |
| 2 －seat3r Roadster | 495 |
| PAIGE（U．S．A．）． $20-25$ h．p．Paige Glenbrook ．．． | 795 |
| 30－35 Seven Passenger Touring car 30－35 h．p．Paige－Larchmont sports | 1，095 |
| model．．． | 1，150 |
| 30－35 Paige Chassis with English－ built saloon body．．． | 1，550 |
| PANHARD（FRANCE）． $12 \mathrm{h.p}. \mathrm{..}. \mathrm{..}. \mathrm{..}$. | 860 |
| 14 h．p． | 940 |
| 18－22 b．p． | 1，220 |
| 28 h．p． | 1，380 |
| PEERLESS（U．S．A．）． $33.8 \mathrm{h.p}$. | 1，160 |
| PERFEX（U．S．A．）， 22.5 h．p．Chassis | 515 |
| 2 －seater with folding double |  |
| 4 －seater Touring Car dickey seat．．． | 825 |
| 2 －seater Coupé | 8511 |
| 4－5 seater inside drive saloon | 975 |

PECGEOT（FRANCE）． 11 b．p．（1－seater） ..... £6け16 h．p．．．．$1,15!$
PIC－PIC．，PICCARD PICTET（FRANCE） ..... 1 リラリ
R．M．C．（U．S．A．）．Complete 1920 6－cyl．．．． ..... －511
RENAULT（FRANCE）． 15.8 h．p．Chassis ..... $\$ 10$
15．8 Chassis Camber ..... 92.5
22.4 h．p．light Chassis ..... 9.51 ..... 1.106
22.4 normal Chassis．．
22.4 normal Chassis．．
37.2 h．p．Chassis ..... 1，（5～い
（Approx．in England．）
ROAMER（U．S．A．）． 29.4 h．p．Touring Model（Prov．）．．．1，35uSports Model1.3.
SAXON（U．S．A．） ..... （；9．5）
S．C．A．T．（ITALY＇． 15.18 h．p．Chassis（Approx．） ..... ほい
SCRIPPS－BOOTH U．S．A．） 20 h．p．A－cylinder Pror） ..... 5.50
Six－cylinder ..... 79.5
SECQUEVILLE－HOYAU（FRANCE）． 10 h．p． 106 in wheel－base Chassis． ..... 50u
S．P．A．（ITALY＇．17－22 b．p．Chassis ..... $-9$
25－30 Chassis ..... 
$35-50 \mathrm{~h} . \mathrm{p}$ ．Chassis ..... 1，150
TEMPLAR（U．S．A．）．Five－seater（Approx．） ..... 445
VELIE（U．S．A．）． 5 －seater， 25 h．p． ..... －
VERMOREL（FRANCE）．12－18 h．p．Chassis，no tires ..... （is．）
4 －seater，complete ..... 96
VINOT（FRANCE）．12－14 h．p．Chassis ..... fis．
1．5－20 Touring Clatsis ..... $-4$
 ..... 1205
WESTCOTT（U．S．A．）．（Approx．） ..... 850

## NEW MOTOR BUCKBOARD

Grahame White Machine Has Many New Features，

Since the beginning of the rear the（ivelame－llhite （ 0. ，i．td．，of London，N．II．，have enlirdy re－design d the （：．IV：Buckboud introduced at the Otympi Show，I ondon． last November，and are now Luilding the Grahame－White two－seater cycle car，according to recent Briti：h advicess The motive power is supplical by a l＇mection $3_{2}$ lop，air－
 and is set in the front pat of th．Fimme umber：beont．I will
 i：：by variable magneto．

 single plate clutch is embodiod in the drive，this engaging





 Foth chein wheels drive on to the back axte













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## KING ALEXANDER OF GREECE DRIVES A FIAT．



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1．1．．．．｜－1．1．1 Sp．．．．1 11．．11．．．1


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DODGE IMAKES HALF MILLION．

Factary Passes Mark in 6.7 Manth of Production．Six Years After Starting．

























































 pellinst．

## CHEVROLET RETIRES FROM TRACK．











5-ton "KARRIER" lory fitted with steel-lined ind reinforeed tipming body and twin-screw tipping gear.

REMARKABLE SERVICE UNUSUAL ECONOMY. COMPLETE DEPENDABILITY.

Thess are three reasons the lore is suprem These are three reasons we get repeat orders.

Write for Catalogue.

## KARRIER MOTORS, LTD.

THE "KARRIER" REDUCES DELIVERY COSTS AND INCREASES YOUR TRADING AREA.

Beside- giving all the peect you could desire, the operating cost of the "KARRIER" is significantly small when compared with that of other lorrics.

It meets the demand of the majority and covers the widest field of litility-it is the greatest value on the market to-day.



II IS more profitable to insure yonr (ar bifionk: a smash than afterwards. You have bought the most suitable car for your purpose mow t.ahe com the most sutable policy to protect llat call.
 fullest possible protection and is the most gencront to the (ar asmer

RING UP THE

## YANGTSZE

INSURANCE ASSOCIATION, LTD.
(Shanghai Central 5475)
and ask for a prospectus.

THIS IS THE MARK ON THE II STORAGE BATTERIES


Motor Cars
Motor Boals
Wireless T. ©gtaph
Subatrime Boats

Motor Cycles Railway Tranls Tolephones Aight Watch Lamps Houschohd lightuge etc.

Complete Stocks Carried in Shanghai

The Kobe Electric Works, Ltd.

129 North Soochour Road. Shanghur. Teluptrone N. 2934.


GAS SiTUATION IN U. S.<br>Not Sc Bad As It Would Seem, says California Club


#### Abstract

          of the comerns.            





 every year. In 1919 the Mexican market shipped 52,662 ,-
 the Atlantic •....)

David White of the ['nited States Geological Survey sees infinite porsibilities in oil obtained from shale, although
 mathem ha- heon developed. White ato:

 natural petroleum of this hemisphere: they form an asset
 nite period.

Motorists, however, should continue to save gasoline, since the use of seven and a half millions cars in America moans that the action of the separate units may have a great influence on the total consumption. Motor vehicles are the heaviest users of gasoline, automobile con-



SELLING MOTORS AT A DOLLAR A POUND.


A now American clecerly designert light war. weighing 1100 pounds, which sells for " dollar a pomm. It is ripuipped with " fonm cycle engine.

It is astimated that a pasenger car wese 30k) gellons on gasoline yearly, and a motor truck $1,5(0)$ aill ms. (Oth users of gasoline are aiplanes, motrs thake, bilws moter cars, farm tractors, stationary and potable engines. paint and varnish manufectore, eleaning imlustly, a..enlim stoves and rill ber manuficture.
 in the Federal Trate ('romis ion repont on the fuel situation are ats follow
'It should be noticed that the conditions in 1921) appern to be greatly impoved with respect to porbuction ambl imports.
 percent. In 1919 exports represented about 10 percent of the total consumption.

The total consumption in 1918 excceded production
 and the preduction of gexolime exaeded cometumplim b 149,446,484, willons.



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 in these district:












## Milburn LIGMT ELECTRIC



## YOU WILL SEE THIS CAR 5 YEARS FROM NOW

 growe as the dat it was hontitt.
Its apparamoe, it- -t is athl mow! will mon have deteriorated through its years of use-
 will continue to function with the same -tuch mbabilas





Anderson, Mever $\delta$ Co.. LId.


Agents in China.

$11 \div$

## INSURANCE

Fire, Marine, Life.
Accident and Sichness.
Fidelity Guarantee
$\because!1$

## MOTOR CARS

## Commercial Union

Assuraice Company, Ltd.
Total funds exceed $£ 41,000,000$.
China Brand: Oltice
INION IBIII, IIN(i。
4. The Bund Shanshai.

Agencics in all Treaty Ports.


MAKING A RIGHT HAND FORD.
English Manufacturer Invents Mode of Changing Conirol.













Mr. Skippins retains the standard tansmission cover,
 - 1 ous which curries three pedals and transverse shafts. The pedals are on th:e 1 ight-land side of the casting, and the shafts, supported at two points, terminate at their lefthand extremities in jointed connections, wherdy the move-










 tett to the righthend side is effected.

 the endinars wa! when the -teering colnt:n is on the right.
 with the set. It is alatmed that thoee who have had the alteration carried out are in every way satisfied with the 1t allte oblamed

## THE AUTO-PALACE Co. (British) Practical Motor Engineers.

 362 Avenue Joffre, SHANGHAI. Tel. W. 465Agents for Renault Motor Cars and Trucks
Diamond T Motor Trucks
Briscoe Motor Cars
Michelin Tyre Co., France.

## QUOTATIONS FROM STOCK

Repairs, General Overhauls and Complete Renovations, Magnetos Remagnetized, Battery Repairs. All Work Executed under the Constant Supervision of Practical Motor Engineers.

Cars for Hire-Used Cars for Sale. Te1. W. 465.

New Find in Motors.
(Contimued from l'age l!:.)
engine was running with throttle wide open. So it is pussible therefore, for the throttled charge to get the full I cmem of maximum compression pressure, insuring that any charge will deliver full valve for its size.


FIG 6

THREE YEARS FOR PROMOTOR
British "Roma" Car Designer Gete Term for Swindle













 [... $11!1$

## GEAR MESHING.

[^37]
## MOTOR CAR

## INSURANCE

THE COMPREHENSIVE POLICY （i1）fll！

## ALLIANCE ASSURANCE

 COMPANY，LIMITED （ASSETS OVER £24，000，000）Affords FULL COVER to Motorists， バしくしたが

LIABILITY TO THIRD PARTIES． DAMAGE TO，OR LOSS OF，CAR

mocluding lamp and accessuries）by
Collision or other Accident．
Fire，Lightning，Explosion or Self－Ignition， Robbery or Theft or any attempt Thereat， Malicious and Wilful Acts by any Persons．

## MEDICAL \＆SURGICAL EXPENSES

## ADDITIONAL BENEFITS

Can be included in the Policy by Arrangement．

## ABSOLUTE SECURITY

## PROMPT AND LIBERAL SETTLEMENT OF ALL CLAIMS．

（1．）．रT：
JARDINE，MATHESON \＆Co．，L†d．， ShANGHAI，

TIENTSIN，PEKING，HANKOW，TSINGTAO

## BRITISH HINTS IN STEERING AND BRAKE USE．

The Correction of Skidding，Placing the Car in Positions Desired and Other Suggestions to Drivers．

## 















Eiqual usi of the Lrakes，even when they do not both

 （athow the sudden application of a foot brake causes on．a

 s：tinctively，in that small fraction of a second which makes
 Imalinta d violently into another vehicle，apply the emer－






 bavel of fite－Ato di－f．ne\％than if the miling motion of

 lance；the same driver will scarcely appreciate that，even
 the fonwand motion of the car so quickly as if that dant．．







 lims：wh n＂idling．＂The remuval of the foot from the w．I．．tor pectal，withont declutching，wall，of itsedf，then low hown a now m：1 quokia




## WE SPECIALIZE IN SECOND-HAND CARS!

## ARE YOU buying OR SELLING?



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```
WE HANDLE HIGH GRADE CARS ONLY - NO CHEAP MAKES.
```

We also have a number of Motor Trucks in various capacities ranging from $1 \frac{1}{2}$ to 312 Toms.

## Demonstrations Cheerfully Given <br> THE AUTO CASTLE

 SHANGHAIslowing down, but will engage a lower gear by double clutching, as one of his means of reducing the speed of the car quickly. -This is an excellent practice to cultivate, because it will come automatically to a driver quickly to engage a lower gear when he comes unexpectedly upon a hill, the steepnees of which is unknown. Were the brakes to fail .on the hill, such a driver would not be in any way nonplussed, but would merely engage kottom speed, which would limit the speed of the car to its maximum for the bottom gear, which is not likely to exceed $15 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Of course, it need hardly be pointed out that, when negotiating a long descent, the brakes should be alternately applied, the one as the other is taken off, and so compensatine the action that tho car neither gains in momentum nor is lun. necessimily slowed up. The capacity of bither brak for bringing tho car to a complete standstill on a hill shmuld bo tested now and thon, and any falling ofl in lwake promer should lo corrected immediately by suth :aljustmem :1 Whe design of tho car provides.

Most cats have a compensaling dentre ling panme that the braking power shall be appled agmally for lubt




 toated and Hown mpalizand.

Given the proper surfike, ail cars will skid, mo mater what non-rkid treads may be fitted to the coners. It is unite posithe to tum al car completely romed in the road. although the evolution is not recommended, by suddenly "pplying ab hake and shaply locking the seering wheel round. Some cars, perhaps owing to faulty weight disposition, hate as greater bendence? whed than , thets. Gut the - itembtathe is mot whe which will wory it shated and
 have been caused by the sheer incompetence of the driver,
 brathen "low the from wheds are men porne - trathe atheal or when the mad in excessilaly cambered will atmost









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## ＂SHIP BY TRUCK．

# Slogan Originating in America Has Spread All Over World． 

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 －multron

 ＇Truck．

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November 17th，1！！1！



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Very truly yours，

##   <br> 

President．

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 of national highways ineluting transontinental or through renutes enst and west，north and south，is resl and urgent， 45－Anmmemal－ant to futher colonize and develon）the


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## GRAND GARAGE FRANCAIS

Newly opened at 310 Ave. Joffre, Shanghai.
Temporary Shops in rear at 17 Rue Bourgeat until completion of Main Garage Building, about Septem ber 30th.
At present we can handle Repair Work only, but when our building is completed we will have one of the best Equipped Establishments in China. Full details will appear in the October issue of this Magazine.

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THE GRAND GARAGE FRANGAIS is Owned and Operated by Mr. Philippe Osterberger, who is well-known to the Motorists of Shanghai, having been formerly Manager of the Motor Car Department of the Shanghai Horse Bazaar.
far western states, are absolutely int:aphle of meeting the fresent day traffic requirements, and until modern typen of roads and bridges are constructed which will permit the rapid movement of heary motor cargo vehicles durimg any season of the year and in all conditions of weatheri, ceonomi(ab) tamseontinental highway traftice will contimue to be but a vain hope.
"Phord-That the road problems of thes middle amd for westen states are mational rather than loc:al poblems. as these states, while possessing vast area and tremendous mileage of highways, have only a sparse population whirh (anmot fossib)! undertake the needed hinhnil! impuovement work, which moreover is ustally of greater impoltanco lot the country as a whole than to the indisidual stites.
 utility value of the motor veluche is limited mely ly the

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"The. Onental Motor"
.) Hongkomy liont, Nhanghati.

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FO.. three vears Paige engineers have been working on this new six-cylinder motor. which has resulted in the most efficient power plant to be found in any motor car in the world. This motor is now (obtainable in the (ilenbrook Monkel.

## IN STOCK

Glenbrook Town Car Limousines
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## SHANGHAI



TYPES OF BRITISH CYCLE CARS

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Some "Rattlers" Are Cars.
























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AS REPRESENTED AND VALUE FOR YOUR MONEY we buy CENTRAL GARAGE Co. we selz FOR<br>CASH<br>PHONE C, 3809<br>used car dept..<br>J. W. DAVIS, Manager.

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 passengers are enclosed between the sulfaces of the wing,






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MOTORING WITH SWAZI'S QUEEN.
African Monarch Gets First Ride in Cadillic.








 of - 8.1 fowns, atid driving in the early morning through


 the math moul






 . .tol, ann intelligent mative dressed in European clothes


 2atane traveller who had come all the way from New
 lomal |Theremery excllsed himself and retired, return-














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## SHANGHAI MOTOR REPAIR $C O$.

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'Phone N. 1951
of their long journey to see the great ruler of the Swazi and asked the pleasure of photographing her. 'Then enswed considerable discourse between the Queen and her comsellor, after which sho indicated her willingness 10 allow this privilege, provided tribute of a soalskin rog be pact. I pon assumance that none of the visitors had sulth an anticle on
 rency, would purchase one, and this sum the visitors agreed us piy.

 the money mast be fortheoming before she atose form the

 the latter finally flacing then for sate heopher momer

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## PEUGEOT TO MAKE IN U. S.

New Company Organized to Manufacture French Models.
Arrangements to manufacture in Ametica a line


 which are fostering the movement. In the in orporation

 made publie, though it is known that these lave been under
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A NEW FRENCH AEROBOAT.


## IORD DEVELOPING NEW LINES.

Besy anj Eng ne Have Receives Allention in 1920 Mosel.


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The radiator has been placed ligher and the body set lower on the chassis. A new style top has been designert amb placed on each of the motels.
 which in its body finish is far superion (o) :m? (ay that hats



 thes fimish of the highest priced a:ar. That dhe w. "1 ment. 1




## NEW SHERIDAN LAST MONTH.

Last of General Motors String Made at Old Interstate Plant.













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British Hints on Steering and Brake Use.




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 siraight line when the stering wheel is moved. As a rule a light touch of the brake will correct a front wheel skid. In



 of shill and amons? with sumb he plame the ear in any
 in line between two others. The average driver will sear

 Wetwecs the two cars, will leavo the back wheels sticking out in the road. The skilled driver, on the other hand, will take advantage of the fact that hy steering on the reverce it a vanm on manourre the car where space is short. The


 locking the car over so that the back wheels point to the
 lian is madion
 in mind that the front wheels describe a bigger arc of a virion than do the back. If this fact is remembered, ti...




 will theu present no dificulty.

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## GAS SHORTAGE IN SOUTH AFRICA．

Eight Dollars for Ten Gallons－Car Demand Good


 compunies in Amevicib．＇Ithe price，however，rematins about












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 chamelled wire enables many more ampere turns to be

 anated of hat law, ath tha-making for good elliciency.


Complete muke and break and ristributor removed from housing showing driving pinion.


Plan of matie atul breali shomin!y rocker, cam "mil $m$ essive tungsten contacts.

The short circuit current is but 2 amperes, whilst the astual working current, which, of course, is but a serics of vels rapsimpulses through the primpr, never cxceeds 4 -10ths; of an ampere, and i: nomally loss, so that there is mo question whatever of the ignition unit talsing any appreciable current out of the battery. The coil would be mothing like so efficient as it is unless: it had a make and break in which all theoretical points have been considerea. It has to allow the magnetizing corrent sufficient time to flow through the coil at any specd and then produce a sudden break calling the instantaneous collapse of the magnetic field in the coil. This is achieved by a one-piece cam of special shape and a rocker arm fitted with a massive tungsten contact-a sign (if the times, suggesting that the days of platinam contacte are mumbered. There is practically no sparking between the contacts, due largely to the well-batanced comdensel fitted in the coil. 'The recker casing is movable with relation to the (anm, and this provides any dewired amount of retard and advance. The high-tension distributor is contained in the cover of the make and break, and is a most simple altangement, the cover being moulded of high insulating material.


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## BUYERS' REFERENCE GUIDE-PAGE 100

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China 0xy-Acetylene Welding Works Office Phone., C. 1982. Shanghai I Yuen Ming Yuen Rd.

OVERLAND IN CROSS-COUNTRY RUN.
New York to San Francisco Trip Made on Average of 27.2 Miles a Gallon.










 aremed 2x. 7 miles to the gallom. To Cedar Rapids, Iowa,
 :310. 4 miles. ()ver the punishing streteh from North Platte,
 Maila.




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## NASH BUILDS NEW FOUR.








 movel in and work stated. With the gradual acceleration

 a.. planning to have their sample cars before winter.


## GOODRICH PLANS PLANT EXPANSION

Enlargements Will Total $\$ 10,000,000$ This Year.
Finlarged preduction of tires, to keep pace with the clusively for tire building. Other new buildings being growing production of :antomoliles and the demand for tires which this automatically creates, has been reflected in trade, news telling of new buiding programs of many of the leading companies in the rubber field. Among the largest, it is made known with the revelation of something of the
 This expansion of the e feocrrich plamt is cexpected to incorane

 $\$ 10,000,0010$.



 Several thonsand additional workere will bee repuired next


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When completed this stucture will liw daw l.une


 current transformer station, a largo refrigeration building.


The comteretus in olvige of the work are cramming















## AUTOISTS PAY FOR ROADS






For every make of car are obtainable from the Brilliant Electric Company.

Conowhing wather on 1 cie :. A. A. arrin tor.
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Every issue of THE ORIENTAL<br>MOTOR contains a Buyer's Index<br>to advertised Products. This is for your convenience.<br>See Page 100.

OVERLANDS TO FOREIGN MARKET.

470 Carloads Shipped in Month of June.












Gasoline Economizers" Frauds.
 Xiphthalene has no effect whatever, in the gnantity advised. on the efficeiency or performance of gasoline. The Enited
 whe hath thic the saly ol them

 in engine operation when theas 'elixirs,' etc., are added to
 gasoline used, cansed by readjustment in the carburetor,

 that many engines, particulaty automolile engines, are


 gasoline to air will often proxluce all the desirable results


 numble 1 ...! it
 retail costs abont (i, \$0.35. A pound of naphthalene pur-

 the economy really lies. By buying flake naphthalene at
 i- wen more strikingly illustrated.

The Burean of standards has a parting word to say of the frandulent claim that these preparations will increase the power and etticiency of gasoline.
 -hath that theme is mes matimatle differince between the
 without, the added material.'


PRICES NOT LOWER UNTIL JANUARY.
U. S. Makers Doubt the Coming of a Drop Even ThenIn the Meantime Increases Expected.

Low price propaganda in the Cnited States is being denounced by automobile manufacturers as the work of certain interests having for their object the effort to retard the progress of the industry. There is nothing in evidence at this time, manufacturers sany, to prompt thu impression that a price reduction is imminent and they are a unit in dechang that there witl be no decreate before Jath. I if then. On the other hand, the concensus is that lureher increases will be amomoned meanwhite. Thais is made apparent in the enmomeenemt of one mamulaturey of an increase of $\$ 150$ in all models was effective July 1. This announcentent is experted to be followed be a majority of automobile companies after the conclusion of the fiscal your, July :31.
 significant in intliating the tront. In imsmimation in






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BALLOON ADVERTISING FOR TIRES.





## ANOTHER NEW ARRIVAL IN CHINA．

New Velie Six Reveals Skill of American Manufacturers and Designers．

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 and China is the new Yelie six－a type of car which in－

 Ibending into one another in a most pleasing mamer． 11sed than any angle the new Velie is strikingly attrac－


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 bearing crank haft：runs whdex withent belotiton at all

 pens：e．Velie clains more in！provements in its new motor


 model－Four－door Sedan and Compe．The new Velie colors












 10．1．Gasolene gatuge on tank．Control－Left drive with
 1Fils．al．Hond and for throttle．Starter button on toe－ Gele 1
 low．om I lowh louvres in hood．Splash aprons protect

KILLING CHAUFFEUR BONUSES.

## Shanghai Might Profitably Take Notice.

The Atlantic City, N. J., Automobile Trades Association has worked out a co-operative plan which has done away with bonuses or discounts on sales to chauffeurs or mechanics. At one time, according to H. W. Cockran, president of the association, it was almost a necessity for a garageman to "fork over" so much discount to chauffeurs or mechanics or lose the business of the car owner. To-day, through an understanding among the members of the association, they are almost 100 percent strong on the refusal to do business in this way. The result is that dealers are getting the full profit on their sales of accessories whethes made to car owners with or without chauffeurs or mechanics in their employ.
entire car front. Increased room in driver's compartment. The best of real loather upholstery. All metal work heavily enameled.

Jighting and Stasting-Two-unit Bijur system. J'owerfol starter engaged by simple touch of foot batton. Octagon shaped headlights. Double bulb with extra reflector on dimmer. Cowl light on special switch.












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# CUTTING DOWN RUNNING COST. 

Hints on Carburetor Adjustment.
























 and up the intuction pipe. In the gine throngh whish


















 Lriven off by the engine and carbonizes the cylinders, while





Between these tro extreme limits there is a fair amount of latitmle. I weakening of the mixture from its proper atrength calnses a falling off in power, but there is actuall! -1 tunge - athenths throngh which no alpreciable increase or decrease will be found. The most economical setting is, of course, the weakest mixture compatible with no fallin. (1) in prower




is by using benzole. Not only is its initial price lower than that of gasoline, but it also gives more miles per gallon, and does not harm the inside or working parts of an engine in any way whatsoever. It also gives the engine more flexibility, with a better pulling range on top gear. The Claudel-Hobson is a carburetor in which part of the revolving throttle barrel forms, in conjunction with a shrouded jet, a system for enriching the mixture at low speeds, and keeping it correct at all speeds.

The Claudel is a particulaty simple comburetor, for should the mixture be too rich at ligh epeeds, the jet need only be changed, for the two adjustments, marked B and (', come into effect at slow and medimm sineeds only. 'The adjustment ( 1 ) is a slow-running by-pass, by setting, which the slow running of the engine can be controited. 'ihe air screw ((') acts in a different inanner: by screwing it inwards it decreases the area round the jet, when the slot in the barrel also surrounds it, thereby increasing the suction through the top row of holes at low speeds. This enriches the mixture at this range, thereby improving acceleration and pick-up. To adjust the Claudel for minimum conamption, therefore, the car should be taken to some hill whict is fust too steep to be taken on topp gear, and jets of various sizes tried until a falling off in power is noticed. It will probably be found that two jets will give equal re-ulte, in which case the smatler one should be used. The is ir screw ( $C$ ) should then be adjusted, being serewed in until acceleration is satisfactory, and with the engine wam, the by-pass screw (B) should be turned until steady slow running is obtained. With this setting it will be found that stating is eaty from cold, and no latek of pewer will fer experienced. 'The serew (B), of coursi, should' be serewed inwards to make the engine run slower, and should be adjusted in conjumetion with the etop whish perents the dorotle from dosing too far.

Tho sembler (arburetor is an American instrument which is probably ome of the mest casily adjusted on the market. From the illustration it will be seen that the jet is plated in the center of at tube romming al throngh the

 "ands to give a weaker one, be djustimg t!k milled mut.
















Achievement is the true test of merit.
To the fact that in the old peace days the Sunbeam held more World's Records than any other car, must be added the invaluable experience gained from the performances of Sunbeam-Coatalen engines during the war-experience which culminated in the engines which made the epoch-making outrand home trip of the Naval Airship R. 34 possible.

> At the recent Monaco Motor Boat Meeting for the Final Championship of the Sea, vessels filted with SuntecamCoatalen engines Kained Firmt, Second and Fourth places.

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 tho athemonts.e mbluat:

## WATERMARKING" RADIATORS.

New feature !ntroduced in the United Seates.








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 but must he macle in the cells at the time of manufacture.
['he. "waternark," under certain light conditions and lionn certain distances and angles can scarcely be noticed.
 altention-getting feature is therefore vers important.

## COMMONWEALTH TO DOUBLE OUTPUT.

Illinois Company Increases Capital to $\$ 6,000,000$.

I oubled output of Commonwealth cars, and an enlan ${ }^{\text {n. }}$.
 are among the professed reasons for a fifteen-fold expansion
 made public recently. The company has been reincorpo-



 at once, and they will he taken up largely by present stockImbler.

The present personnel and otticers will remain at their posts for the new company, and while the company emphasizes that as large portion of the new financing is to be

 tion of the company"s oil-burning engines and of its metallic -toul freking is to be materially extended.


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The Oriental Motor will be pleased to receive correspondence on topics of motor interest and will publish such contributions in columns specially set apart therefor. A column will also be devoted to the answrimg of guevios. Ill rorrespondence should be addressed to The Oriental Motor, 5, Hongkong Road, Shanghai, and should be accompanied by the sender's full name and address.

To The Editor,

## THE ORTEN'AT MOTOR

Dear Sir :
There hats comes to my atontion ins at mer poreibls manmer during the past lew months the bther disponat of the life and 'safety of tramear passengers shown by the motorists of Shamghai. When at tramear is stambers still motors will ghow through the crowd eiller attemplong to

 the right of wity. 'This is at matler which should be exth.
 given down town at the salids islande but n) proterlmen 1. given at other pxints.

In the United sitates, in the majority of cilioss, montomels stre forced los stop lheir coms within live ford of at stambur
street cor until all of the passengers have alighted and gotten on. 'Jlais should aton the enforced here 'The motor ear is not the merowned king of the read athe the mutorist who permits his chauffeur to plow indiscrimately through a crowd should be punished. The attitude of the Chinese chatuthen foward such happronins is well known and the blame is entirely upon the owner of the car for permitting


 of drivers' licences to young and irresponsible chaffeurs.




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NEW "WRINKLES" IN AUTOMOTIVE ACCESSORIES.





















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ITALY TO SPEND 30 MILLION IN AIR． Aviation Program as Anncunced is Largely of Civilian Na ure．

Thaty million dollers will be spent in the development of aviation this year in Itals，aceording to reent ammoner ment：from that govermment，the maknity of which will 1 ． need in civilian plams．These plans in late a com－ blete air transpatation sutem f．w both possengers amt freight，in regular air mail ：－rvice ：mad the cestabliytment of international services on the continent．

I stady is bebing made of international rombes whith will join Italy wath Fratere，Switarland，Anation，Jnes－ Slavia，Greece and the Italian colonies．T＇ros dirigibles are
 and Mitan and between Venice and Milan，and plans wre

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Mapping U．S．Air Routes．
















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IT'S HIGHER IN THE AIR.
Six hundred pounds was the fare quoter by an airplane transport company for an air journey for 15 Midland motorists. from Liverpool to Douglas and return, and for staying a fortnight in the Isle of Man.
germany Resumes air traver.
Large purchases of American gasoline has enabled the aerial traffic companies of Germany to resume aerial service, according to dispatches from the American commercial attache. More than fifteen million marks have been appropriated by the Government to subsidize air navigation on condition that the newly established lines carry mail. The Department of Commerce has been advised that the American aircraft manufacturers are needlessly alarmed over reports of dumping of French airplanes in this country. There is no such intention.

## NORWAY HAS TRUCK LOAD LIMITS

In Christiania and all large cities in Norway the maximum weight allowed on the rear axle of motor trucks fully loader is 4400 lb . An exemption is obtainable, however, from the Department of Public Works allowing a total weight up to $13,200 \mathrm{lb}$. irrespective of the distribution Electric motor fruck are atal tur hare grown in popularity lately throughoul Norway

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# THE <br> ORLENTAL MOTOR 

A Monthly Magazine devoted to Motor Interests in China and the Far East Generally.

Vol. II.
SHANGHAI, OCTOBER, 1920.
No. 7.


T
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 gasoline motor vehicle, which now tears its way under tho
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 the promoters of the Company, Mr. L. O. MeGowan, had



 Ithe lima jatang of the mond car trake. He at present thus an them sutombiles of various makes. Nearly one thomen ! ame fily fatom cas ate how operating on the Gulat Duacti.

A large number of both Chinese and foreign concerns rapidly followed the Chinese-American Trading Co. into the automobile business in Peking. At present there exist, besides eleven well-outfitted Chinese garages and about thirty-five service stations, five important foreign automobile distributors. These are:

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Chaperon and Co., local agents for the Renault;
H. S. Henigsberg and Co., Inc., dealing in Cadillacs, Buicks and Chevrolets (Peking branch opened this summer), the local agent for the Italian Fiat Co.
A few days ago, license No. 913 appeared on the streets of Peking. It is most likely that before the New Year, there will be one thousand licensed motor cars in Peking. The motor car appeals greatly to Chinese men and women of wealth and officials. The advent of every new regime brings a large number of new officials into the market for cars. The covered or closed cas is the favorite with the Chinese, as it gives them the privacy and dignity of the sedan-chair along with its spreet. In conseguence of this Chinese taste, as well as the utility of the closed car in protecting them. from the always prevalent dust and the beren cold in the winter, a mumber of buikders of topse to fit the (ouring models ordinarily imported have been doing a thriving business. The importers find it pays thom tretter to let this go on than to import grantitios of chosed models, onvines to the much heavier freight on these models. 'The ('himene


An Oriental louch on the romel lo thes siammer I'thio.


1 Chinese Post Office truck beside one of the gates af the chl Impurinl City. Photo by Camera-Craft, Peking.
buiders do, on the whole, excetlent and dmable work. Walnut wood is largely used, the joining, fitting and polislıing bong done entirely hend.

How strikimgly out of proportion the development of the motor cat industry in Nerth (hina has bext to that of whe lines is evidenced ly the fact that to-day these are far mome motor cats on the streets of raking and Themsin than of





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# TIMING THE SPEED KINGS FLIGHT 

Americans Have Perfected Delica'e Electric Apparatus For Clocking Races.

## Thum thes a. .



























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The mojectile's speed wan computed be meastming the time required for it to pass over a given apmece. but the





















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 ranerl G grout apords.
"tmon 'The third disk, similarly graduated, registers - coulde mini in : monted with a fourth disk graduated in 4-4 10 ifirts and latter is connected electrically with the


 "nvi" Un il ik registering seconds. In turn, every revolu(Continued on Page 69)

## WHAT OF THE USED TIRE?

## SorCalled Scraps Are Built Up and Sold in the American Market.

CHINA 'AS YET has not come to the stage of development in the automotive industry where a profitable business can be conducted in used tires solely. Exclusive tire repair shops have made their appearance and retreading is done but reclamation of scrap tires has not as yet arrivod. In the United States an interesting development is going on-a scrap, tire industry is being builded. Here's how the process works: When an old tire is relegated to the junk pile many people consider that its life is ended. As a matter of fact it is only half over.


One chepter is fimished lout there is another till 1., 1 .e lived. The second is just as long and much more interest ing and varied. Such a tirc is known as a serapt tire and is al semowhat misleading tom, in that it pietures tirew that are good for mothing exerpt for the rubber that is in them.
 fatioly accurate and this is the semae in which it in 11 : 1 .
 tire dealer. In varions wals the line gravitate to hie 1111 -


 from individual owners but alow -quelded, mumbled and all justed tires foom factorico.









accumulated a load of assorted junk, sells it to a junkman who proseseses at gatd. For leck of a better name let u- call this man a wholesale junkman to thoroughly distinguish him from the junk collector. The collector's load consists not only of cld tires but the usual aggregation of scrap metal, paper, broken furniture, etc. The wholesale junkman deals in all these things so that tires are just one of manv lines. This man may sell dirert to the scral mbber dealer if there is cone in the locality, but more than likely there is not and so he probably sells the tires to another wholesale junkman
 to that scrap rubber dealer.

In come reboct this erganizetion of the bumen resembles the ussual marufacturer-to-consumer organization Where the !ath of the go de is: Mandacturer to joble in retailer to consumer. There is this difference, however, the lins: .! demaremtion are not dewn: tight! In the cam just mentioned the manufacturer will not sell to the retailer nor customer but to the jobber cnly. The jobber will do humens only with the rataler. But in the junk busimes overy man is out to do all the businse he can, wholwate or retail. Just where along the line the more desirable tires are disposed of is a matter of opportunity. In some instances quantities of tires will reach the scrap dealer practically uncullerd and then again the tires offered to him mas be an thoroughly picked over that he may refuse to buy them, in which case the junkman wholes:lei soll- them th a mo claiming company. The latter recovers the rubber, for Which there is a valded demath. It is med lumedy in mahers


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## RUSSIA CLAMORS FOR MOTOR CARS.

## Only Chaztic Conditions Prevents fimmediate Opening of Market.






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 ahy plat of a rabile cumbury

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 sulerian railread, prohably harbors more automobiles than

 of American manufacture leading in number by a large majority. The populace has become motor wise, but not without paying toll. I)uring the earlier part of the Allied cecumations it was not unu-ual for several pedestrians each day to) be victims of antomobiles, and as the months elapsed, ignorance and carelessness were replaced by intelligenco and manm, ban! the mumber of matyrs-for such were those whese lives went as example-gradually decreased.

The evacuration of the Allied military forces afforded
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 equipment it was feverishly purchased by the Russians, com1 ham in camme baye hang low and oll in heated, the res

 their original cost price, after having been used. Russians,





 lintan was the pandme, at all were red and blue. Part of


Vladivostock station with an Allied truck in the foreground.
them were rebuilt ambulances which had been in the Canadian Red Cross Hospital service and were originally of American manufacture, while some of them were old chain driven French cammions which had seen service on the battlefields of France ; and others could boast no identification at all, being the fruits of the genius of Russian mechanics who had assembled parts of various makes of cars and actually made them function. The success of the bus line was never in doubt from the day it commenced operating and its patronage exceeded safety capacity loads, some of the largest converted trucks carrying as many as sixty people, while converted touring cars hauled ten or twelve persons.

Vladivostock's "taxicab stand" grew from four or five cars 10 a string more than two squares in length in less than five months, and the Russians who could afford hire cars (and many who could not) used them for business, pleasure or even funerals, as occasion demanded. There was no question about the popularity of the automobile. Evenings and Sundays the long taxicab stand was practically deserted despite the irregular and fabulous rates which wewe charged. Thus the antemobile had its inception in eastern Rowsia, ans eastern Russia received and weleomed the comvergne of modern times.

Aready the presence of the antomobile hat mate itsolf
 simes predict that the atomobse is destimed to be an ingos dient in the come for Jobshevism. Not many monthis :
 rather thath the somvenience of the matiaces athe emaneythently were frowned upon.


Stuck on a native road vilstide of I'lullcostoch

Time and association have brought about an interesting change and today one can see large cars, bearing painted inscriptions on the sides which denote that the car belongs to some department of the Bolshevik government or city comeil. The Tadivostock police department has, in some respects, kept apace with the new traffic. There are traffic officers at the more important street intersections where they endeavor to regulate traffic, although handicapped by lack of proper education on the pert of drives.s. It is not an uncommon sight, daily, to see cars racing along the main street at speeds varying from twenty to seventy miles per hour, which would seem impossible and frequently results in girief. Russian motorists, almost without exception, eppear to be afflicted with speed mania.

In conformance with the Bolsheviki program to "internationalize," the government has incorporated in its automobile laws those things which were considered best in motor car regulations of the various nations of the world, so that


Tire trouble on "linssiten militury menl.

Siberiar now hats more of an intirnatianal "la:-h" of mown
 own particular reynitements. I'lais is a minor combideration and will in time he eromeded.





















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'Doubtless the average male motorist would laugh at the idea that women had forced a large number of the improvements in motor car design," says am American motor car designer. "But if we trace the development of the motor car back several years, we find the feminine motorist has contributed more than her share.
"The first cars were chain-driven-and had the motor car remained a man's plaything we might still see chain drives in large numbers. But as it became the transportation unit of the whole family, milady disliked the noise they made, and the chain had to give place to the silent,

It was an American who drove a light car of universal popularity to the topmost points of the great hills overlooking Vladivostock, and awed the populace as he edged his way up seemingly impossible gracies and along precipices, with only a cowpath as his "boulevard." 'Th supped down car in which the feat was performed is shown at the top, flying an American flag. In accomplishing the trick it was necessary


I'on versks ont frome Iladimentorli.
at one place to back up hill over one stactich in order the gel the gasoline to feed to the motor, H1e grould beime: su stown that the fluel would not run up to the carturetwr, causinge the ongine to stall.
clean, and concealed shaft drive. Mere man might also have stood for noisy gears and a host of other rattles, slaps and squeaks-but the woman who motored, emphatically put her foot down and demanded a quiet car. Therefore, more attention had to be paid to the more careful machining of gears and other moving parts. Special metals and special compounds were developed until they ran together as noiselessly as the wheels of a match.
'One American company has just finished developing a pressure pump whose one moving part cannot possibly make a noise. All this to get rid of a ticking about as loud as that of a good alarm clock, made by a piece of meial, weighing perhaps an ounce, and falling a quarter of an inch.

The first windshield was installed so that a woman"s hatir would not be blown about while she rode. Fore doors were invented for her comfort. Salfety, too, Wats insisted upon. White one's better half might have been perfectly willing to bake a chance hersitf, she refused to risk the persons of her chideren. She demanded extea geted brakes. better principles of construction, and rear atales whese

butt it is in the matter of eoak wok and wher refimethents that womath hats exerted the most direct intluethee. It is hout simple justice bos sily that in this fiobld there has










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# ELGIN EVENT TO DE PALMA. 

Speed King Breaks Course Records in Small Engine Triumph.

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 stopped on his last lap for gasoline. Except for signalling
 viewing the race from the grandstand. There was nothing (1.) do bout insth the cir mate the - -mal. dircmit with

 a-h lu-would be a luge joke, because with the usual mum-

 prise. Authorities conceded after the race that for masterly driving, sleed, car performance and attendance it was the unsaturl dirt track erent ofer rith.

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| Driver | Car | Time | M. P. H. |
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| Zerisel | National . $1912-305$ | $\mathrm{s}: 35: 5: 39$ | 6i6:45 |
| De Palma | $\begin{aligned} & \text { Mercedes } . . \\ & 1913-301 \end{aligned}$ | 4:25:35 | 68:9 |
| Anderson | $\begin{aligned} & \text { Stut/ } \ldots \\ & 191.1-301 \end{aligned}$ | $4: 13: 38$ | 71:5 |
| De Palma | . Herceles 1915-301 | $4: 06: 18$ | 73:53 |
| Anderion | . 5 tut/ ..... | 3:54:2.5 | 77:25 |
|  | 1919-301 |  |  |
| Milton | .Duesenberg | $\text { . } 4: 05: 27$ | 73:9 |
| De Palma | 13allut | 3:09:54 | 79:5 |

I'he cars although fitted with smaller engines than those whill parmaly baced at Elgin were faster and gate less in ohble. It 1- a datultobe achi-vement when eight cars fan lue dhwen orer what atter all is but a country road at fonltic - pand thmultout a 50 -mite grind and do not have A.) chatlen angle time llant is still more remarkable is


1. Wi.t. D: Palnat in has ballot that walked away with the Elgin event.

# THEY'RE REGULATING PEDESTRIANS. 

## American City Will Make Walkers Share Traffic Responsibility,

T
HERE IS NOTHING so obvious to the motor car owner or the careful observer in a port city of China as the absolute disregard of safety upon the part of the native pedestrians. Motor car drivers who are foreigners are under a nervous tension when on the dowtown streets of Shanghai. What is true of this city is also true of other centers in the nation, where the motor car has found a place in the daily life.

It would seem that the Chinese are unable to grasp the danger encountered by walking lazily in front of a speeding car or have acquired an idolence of ages past in which the sedan chair, wheelbarrow and the two-wheeled cart were the only methods of rapid transportation. THE ORIENTAL MOTOR for several months has been advocating the promulgation and enforcement of pedestrian rules and regulations as a solution for the traffic problem which today brings its toll of killed and injured.

In this instance it is of extreme interest in China and the East to know that cities in the West are enforcing such rules. Hartford, the capital city of the State of Connecticut, U. S. A., is regulating the walkers with success. The follow-
ing notice talsen from the monthly bulletin of the Automobile Club of Hartford gives the "inside story" of the regulations:

PEDESTRIAN REGULATIOES.
Chief of Police Garrett J. Farrell has ordered all traffio officers to regulate pedestrians as well as vehicular traffic by the "stop" and "go" signals.

This is a step in the right direction and will be appreciated by every driver of a vehicle. In the past it has been almost impossible in some cases to move when the traffic officer gives the motorist the signai to go, because pedestrians do not pay attention to it and keep on moving.

Under the new ruling pedestrians must stop on the sidewalk unti! told to cross by the officer.

The first arrest under this rule was made a short time ago and our friend Judge Pallotti imposed a fine of $\$ 5.00$ without costs, on the offender.

All kinds of regulations have been in force regarding vehicle traffic but pedestrians have been allowed to follow their own free will, to cross anywhere at any time, knowing that a motorist dare not run into them irrespective of the fact that the efficer has told them io go on.
the fact that some of these tires bave gone through previous races. The tires, for instance, on Milton's car went through the Tacoma race severai weeks ago and after going through the Elgin event looked good for many miles more.

The lesson of the Eigin race-smatler engines driven at high speeds- is directly applicable, as all the lessons from racing have been, to the design of commercial antomotiles. The engines used in: the race were but 6 percent greater in piston displacement than that of the Ford engine, which fact would seem to indicate that before very long we might expert to see a gradual decreme in the size of engines for our passenger ears. The smatl cars were mote ceonomical in fuel eomsmmption and the fact that ('hervolet had to taks on ford was due principal!y beramse he lost much when the foel line was being cleaned ont.

Foaster time was possible also becamse of the lien that many of the carse need front whed bakes. It is a moticeahle fiad that the cabs mo equibpe t were well up in liont during the race. The Ballot and bues.mberge hat fomb wheed brakes, which athowed to rime up much alo. श for the turns before shatting off. Malfond made It. vatemben
 brakes he would have finished better than fourth. Tho mace this gear was hamded in as splemtal manmer. 'Th ( hathe


 to carto of $18: 3$ cu. in. displacement.

Owing to the smath chatry list there wass :anm dath wh
allowing cars of larger piston displacement to run a parallel race with the smatl cars, in the hope that dhic would ofter more entertainment for the crowds. To this Director Root was strongly opposed, holding that the rate was heing mum for the benefit of thee lä3-c|l. In. जlase catre:and with the cream of the racing talent represented, there was little use





 Hatn the new prped men coutd tithe it downs.

# The Oriental Motor 

Motoring - Motor Cyeling - Aviation<br>A Monthly P'ahkathon Decoseal w. Motor lnterests in Chima and the F.ar East Cienerally<br>Founded April, 1919.

<br>Landon Representative C, Cokayne Naylor 30 Southampton S:

Subscription Rates: Mexican $\$ \mathbf{\$ . 0 0}$ for $\operatorname{Six}$ Months or Mexican $\$ 5.00$ for One Year in China, Japan and The Far East; America, G. $\$ 5.00$ Yearly; Great Britain and Europe, E1; - payable in advance. Single Copies, Mexican \$0.50 each.

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Registered at the Chinese Post Oflice as a Newspaper.


## EDITORIAL.

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This interesting development in the world's premier




Whalame - I ut what thin ar up of frominent Detroitors fons set the ball rolling. and that its example will be followed by groups in other cities, to the end that in a few years the country will be dotted with aviation country clubs? This in one int maline and po-shle way for properly-buit
 $\therefore$ anoly if 11. I.1..1. It will be an object lesson for C'ncle L m: ${ }^{-1}$

Ind it might be added that these men are also setting I. .. . uple for the rest of the world. After aircraft comes to ‥ upy a more stable position in China and the unraveling is iln prownt tambe an kis sivilian aliation jowsible, there might ie evens such is ficnture in the city of Shanghai.

## MOTOR ACCIDENTS INCREASING

From all parts of the world come reports of an alarming increase in motor car accidents and the increasing loss of life through careless and irresponsible driving. Even in those countries of the West where one would naturally suppose that a greater degree of care would be exercised in such matters, news journals of all types are raising a protest. The following editorial from an American motor magazine may be taken as a representative examplo:
"It has been estimated that 10,000 people lost their lives in automobile accidents last year in this country and with about $2,000,000$ more cars on the roads this year than last, we are safe in assuming that the number of deaths this year will outnumber last year's figures.
"There is need for concerted action and antomobile dealers must be looked upon to render a valuable assistance in the way of not only instructing their customers in the way of handling their cars, rules of the road, etc., but to see to it that repairs in the shop are properly carried out too in order that a customer will be assured his car is safe to drive. For instance, the relining and adjusting of brakes unless executed properly may cause a serious accident and possibly result in the loss of lives.
"It is one thing to observe the rules of the road and employ crdinary intelligence in driving a car, but it is employ ordinary intelligence in driving a car but it is potential speed of the modern automobile is in the right condition to prevent accidents or reduce them to a minimum.
"Dealer asscciations that have already done big things in the way of getting good roads, good legislation and many other important things that directly or indirectly benefit their business should give the subject of automobile accidents their serions attention. Individually the deater can do a lot towards minimizing accidents in the waty or instructing eustomers and watching the work of his shop), but collectively deaters can give greater impetus to at satel? first movement that may become national in so ace "
'Turning to our own section of the world we find It ansKong, Singapore, l'enang, Shanghai, Janilat whe wher citios of the Orient protesting through their organs of public epinion. It is to be experded that with hative damflemes in the various lands of the Fers liand that cameleseness would he more rife, hat that is no reasom why such a condition shouht be permitted.

In the city of Shamghai atome there ame manemone accidents every day which often result in loss of life but which are mot known to the pullice, due lo the ir iseltatmon.
 of the Sonth reesed from one (t) there anl liac sathon. anecidents werkly. Gomothine must int sh ull tre fon - m this mathes.


 than one motorist, in (himat coperally, amome al lis.
destination after a drive of several miles with his nerves at high tension because of the listlessness of the foot passengers. It is often! maddening to apply both the foot and emergency brakes when a pedestrian ignores the warning of the horn and stares stupidly at the approaching motor.

On the other hand it is equally as maddening to be crowded off the street in attempting to reach a street car by a motor plowing by or to be swooped down upon by a car turning a corner at high speed and practically on two wheels.

The correction of this fault lies both with the education of the pedestrian and the motorist. In the Far East a safety first campaign in the native language should be undertaken by the police of each center where motor cars are numerous and rigidly enforced. This wovld teach both the driver and the foot passenger his relative position and duty in the scheme of things and lesen the possibilities of death and injuny. This would le a monumental tark in China, but if city ordinances were brought to the assistance of the workers and more fines and imprisonments doled out the results could be obtained.

As cited in the editorial from the American journal, laxity in the upkeep of the mechanical details of the car may result in accidents. Brake linings and adjustments play a lig part in this connection and many a life has heen lowt because the motorist did not give such attention either through ignorance or procrastination. Then there is the mater of eontrolling chatfeurs. (ireater care shoul: 1 be exocised in granting lieenses to mative drivers and in the cate where acedents happen white the ownere ate in the car they shouk be made to bear the pmishment with the diver.

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# BRITISH SHOW SET FOR NOVEMBER． 

Exhibits At Olympia And The Winie City Expected To Total 500.






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 E．n．．nt．．Vandy，and Westwood．

 be considered to be a light car show．This is scarcely cornect，

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Car Exhibits at Olympia（97）

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## Car Exhibits at The White City（77）．

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The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

## UNION'S

COMPREHENSIVE

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## CHINA MIGHT BUILD MEMORIAL ROADS.

Example of American Highways Might be Taken by Far East Republic.

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1)r. Jolnson has taken up the work, with headquarters





 Whem- It un Xen liak on 11 - hangeton the road is paved.
 in in il comblr: walla monh ant and southeast, but there are gaps: where primitive roads render travel difficult. These f-l|- mon the fald. withont further delay. The zone of

 phther mole of this amthment dingonal from New York to

Continued on page 83)


## Strength in Goodyear Cord Tires

THE manner in which a tire meets the intensified heat, strain, punishment and fatigue of racing indicates its capacity for service under normal conditions.

Goodyear Cord Tires have captured premier honors in speedway and road races throughout the world.

The significance of this for the average user lies in the fact that racing more swiftly tests a tire than any other usage.

The strength built into Goodyear Cords that makes possible the racing speed lies in their being made of thousands of long fiber cords.

Each cord is laid at an angle of 45 degrees. Each layer and cord is insulated and upholstered with a springy cushion of pure strong rubber.

Each cord and each layer is free to exercise, flex and recover independent of the rest without contact, without friction.

Goodyear Cords absorb heavy impacts and road shocks, instead of resisting them.

Their resilience would fail if it were not for their strength. The sturdiness built into Goodyear Cords ably defends them against stone-bruises, punctures and blowouts.

Because of their strength, they wear long and stubbornly, yield surprising mileages. defeat ordinary troubles and afford maximum scourity

Goodyear Cord Tires reduce gasoline consumption-quicken acceleration-incrown -reed and kewhen car hte:

Their immense strength and flexibitity are directly due to the particular Goodyear Fand combllition.



## U. S. FIRST TRANS.CONTINENTAL MAIL ARRIVES.




NEW YORK SALON IN NOVEMBER

De Luxe Show to be Larger Than Ever


 TH15


















## LEFT HAND DRIVE WINS.

British Authorities Refuse to Rule it Out.
lititi-h alutomohile anthorities have thwarted, for the muntin in least, the attempt to have the makes of motor
 at thent l.anithen wivo.... If swit a rewhation had been established it would have been another barrier against the





Flow Wepratmental Committee, which bas charge of new tul. Ans roud vehicles, has decided that "there is no avail-
 public safety to justify the prohibition or restriction of the
 Cimugh uniformity of construction of such vehicles may for








## EVERY

## GOODRICH TIRE

and all other Rubber Goods
bearing the Goodrich name or trade mark are manufactured in the Company's factories at Akron, Ohio, or at Paris, France, and at no other place. This is your assurance and our Guarrantee of high standard materials and workman-
 ship, backed by over fifty one years experience in rubber making and of fair business dealing.

## THE B.F. GOODRICH RUBBER $C_{o .,}$

AKRON, OHIO.

# AMERICA WINS INTERNATIONAL RACES. 

Many Interesting Features in Motor Event Held at Osborne Bay.

## 

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 They are soleal amilh Masme Thm sis. licemee all the pumps and such like are shifted to the bate of cach nomon


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 lubricated excessivels
 their broats every das. a thith emmeatens in the case of Gratal raft Tle Thanatlanti eraft are pancurally the lattomed, except in to the front, and have one stop each The sente of thmor




 Bhent thers tow a forsword rubler working in solad, undisturl)of waten Than, it dow sut check the speed of the lesat.








 .. - an I out that Niss America did not drop twenty-five chucine revolutions a minute when making a complete turn Ahont, whereas Harry Hawker, driving Sir Edward Mackay
 tous a mombe in ma:hime turns. In short, these American borits almost "tlutter" beween their fore and aft bearings, a.w. tively on the step and the stern. Certainly, the showmg reveats muth in favo of having a single rudder in tha midfle of the leat. Woreover, the prophellers stiek out clear away from the stern of these boats, thereby acting
 fion, whereas the British suffer from it badly, as is proved by putting up the engine revolutions without increasing the pered of the boat.

13y contrast with British practice, it was remarkable to note the American propeller-shaft, which is an unmachined lum. suht white buetal lyarmes that were practically


 … is If... nhat bith steond tace the thaft of ofte of these buits was quite loose. The propeller must have been perfectly balanced because the sbaft itself is overhung, there being no back bearing to it.

## 5,000 TRUCK LINES IN U.S.

l"ime ate now atrout 5000 motor truck lines recorded athl ith opromimn st the linited states and many more thom-and unteconded. Motorized highway transport is a new industry, but its benefits are so varied that it will be but a short time before it will spread like a network over the entire country. Freight transport on the Lincoln Highway east of Chicago already bids fair to far outdistance in weight at least the tomase of passenger vehicle -


Fond:

3 3n

89.91 Rue Montauban, Shanghai.

Phomi ( jos7.

# NEGLECTED TIRES ARE COSTLY 

Ghua Seems To Be Sufering．Iron Carelessness．Goodyear Man Declares．












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 if educating the public to appreciate the value of service．










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 ifrood iny in India or C＇evlon，and the tires the people like





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## Cachard

If you were a contractor, building a ten storey building, would you have your bricks and mortar carried up ten ladders by the antiquated hod-carrier method?

IF you expected to show a profit you would NOT.

If you are Moving your freight and merchandise by carrier or horse in these modern days of Motor transport-you are LOSING A LARGE PART OF YOUR PROFIT.

25,000 Packard trucks all over the world are showing their owners a profit that is proof conclusive of the efficiency and economy of the motor truck.

## "ASK THE MAN WHO OWNS ONE"

## H. S. HONIGSBERG \& Co., Inc.

## MARLES STEERING ATTRACTS ATTENTION.

New Einghsh Gear is Smple in Mrihamsm and Construction.




























 columes, which in the illustratumin is millonemt ty the t.ater C, are two opposed cams which are arranged to make firm







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-acroil impurtunt claims of adrantages are made on botale of claes tiatuig lof the firt place, it is practically


 recognised methods of manufacture to produce this gear ar precisely that absolutely no apprectiable backlash occurs; in aldition, she form if sansimelum adoptel rembers the thome alusat evelasting. and likely to maintain its freeinon fom hacklah mainfimely.
()ne objection which has been put forward against this type of steering is that, unlike the worm and segment, it does not provide that modicum of irreversibility which, in the usual type of gearing, very largely prevents the - fle i thon winem - hom:- While it must be admitted that this pmank umversibility is a feature of advantage in connection

 and in the process an additional advantage has been gained.

The we thent ly whith thes end-hase been secured is 11. .a thllows. The cams, which are rigidly mounted on the
 Whe. That is in a we when the from wherk are straight a comparatively large range of steering wheel movement is mopurem to divert them in a fiven extent. But as their movement continues, so the relative movement of the steerbig whim flamerac.

In ecplanation of ithe it masy be said that the cams bumese in ateg hana from thair hase toward, their summit. T1....flen af whe . that when the front wheels are in their
is rolowel ins 1 ine : .


## AUTUMN VOGUE

WI'TH the arrival of Autumn those who appreciate a Closed Car begin to look around for the car of their desire.

Most people will be quick to recognize the rare beauty of the Cleveland Six. Its lines are wonderfully attractive. No car at any price reveals more intrinsic beauts.

The upholstery is in the finest quality of carefully chosen materials. The cushions are of the latest and most comfortable design. The back
cushoms nicely rounded and softly vidhling. to fit the figure. The seat cushions full and with finest springs.

The windows may be raised or lowered with ease. Door handles are of ebonite neatly trimmed with nickel.

All appointments are of wablent pratits.
In every detail one of the three, Sedan, Coupe or Limousine will suit those who seek something better than the ordinary.

## THE SHANGHAI GARAGE COMPANY, LTD.

EASTERN GARAGE

## MAIN ぶHOW ROOM

Star Garage, 125 Bubbling Well Road, Shanghai.

## U. S. PRODUCTION INCREASED IN AUGUST

Factory Ourput of Passenger Cars and Trucks Beats Jul,.









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 profuction was cut materially in August, the decrease, as
 Eissex end. Bankers in Detroit, as well as those in nearly
 (an arem- in inclination to take care of all good risks.



 there was plenty of moner for use of the farmers with which




 1... all of the factories in Detroit territory are working

 antodinely: This applies particularly to the Hudson-E-ars
 the latter factory the five-day week, with a curtailed rew
 Les been down since the middle of July and officials an:
 storned
 - 11. 15. Rewhuption of production at Maxtell-Chalmers is a 'lue-tion that rests entirely with the managing commitlee












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# WHAT'S TAKING PLACE IN YOUR ENGINE. <br> Correci Lubrication is An Important Feature of Motor Upkeep. 












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 surfaces become oil sealed one to another, and in order




 its location relative to the oil re servoir must be taken into




 which is often too late and the damage done.

Many sils are mamufactured for motor lubrication, but


 (1) help you to eliminate your troubles which are often put down to some mechanical defect.

## THEY'RE CHEAP HERE TOO.

## London Prices Find a Counterpart in Shanghai Advertisement.

 What 1.print. : th. ...ntial fart-onf at liolls-lingee that was In lion ....ntioni ha it - .ownot in lonton for a few paltry thoufint founds, which though an old pre-war model still was hang afimel smmewhat war the oriminal purchase price. Now comes the following in a Shanghai newspaper, offering - -milar li-li - mumadnt more aged hut nevertheless in the funaluy

Ohtainable from friend in England, 1912 model RollsRoyco, early shipment, price $£ 2,250$, c.i.f. Shanghai. Apply

'I!. first story was accompanied by the comment of "some price," and the same seems to be applicable in this later case closer at home.

ANNOUNCING!
THE LAST WORD IN MOTORDOM


THIS SMARTEST AMERICAN CAR WILI SHORTLY MAKE ITS APPEARANCE IN THE FAR EAST WILL BE DEMONSTRATED BY

## THE FRANCO-ASIATIC TRADING COMPANY

95 RUE MONTAUBAN, SHANGHAI, CHINA.
EXCLUSIVE AGENTS FOR NORTH CHINA,
INCLUDING MANCHURIA AND MONGOLIA.



## NOTES FROM HERE AND THERE



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 35.- Chemetor






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## IT'S TAKEN A WOMAN TO APPROVE THE PARACHUTE.





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Ingam Lamits I: Inch, managing-director of the
 on a - hort in-pothot trip.

 - Hestir mantomg. The fir-t ane will be held on October
 motur cycles bicycles and ricshas.
 a the h. is pproximately equal to that of the entire capital


 Wh in the service 11.813 motor cycles, 377 caterpillars, 135


Xims an mants hatce hal the experience of having the finish of the hoods of their new cars suddenly become dull while the rest of the car is still glittering in its nowness. When the hood finish once gets dull it is almost whloulhe to bring lack the stane without refinishing it. The dullness comes, of course, from the engine heat. Some owners make the mistake of washing the hood while it is hot, and that increases the dull effect. About the only way of eliminating this condition is to line the hood with sheet . Wh..... which is comparatively cheap.

Three airplanes arrived in Swatow on September 10. Ih. are supposed to have been imported from the United

 company, tire and rubber manufacturers of the United Stum- hir been in China during the month of September on a tour of inspection of the agencies of the Company in the Ioe: Iont Mr. Comeil left Shanghai for Manila during the ashor peat of ontuler lint will return to this city \owmber 1.

 at 11 I Behm at actimg maner of the Company.


望買品号

NEDEH

$A^{\text {LL models of the }}$ Nash Six，both open and closed，have cord tires as standard equip． ment uml＂re distin ！uisheed by rure berminty of design，finish and ap． pointment．

THE most Popular Car in America and the coming car in China．

Investigate at once as deliveries in China of this superior car will be limited during the next few months．
And the superiority of the Nash Perfected Valve－in－Head Motor gives to the Sedan and Coupé the same quick responsiveness that it does to the touring car，roadster and sport model．

TELEPHONES
C． 4461 \＆C． 5312

## THE LITTLE THINGS ABOUT YOUR CAR.





Pate mith on this pare will the pmbithen little thang - - y yne mane of that you should know-














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 that all of the gextine prethosed ifets io the creme.










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 the .ante. If if is mall friment. The remerest ediee should Then bur ants cond tol with whatever means are at hand.


 (ande for fiew? them alhore of ihit the? will make a tight

 1) bell wire, with insulation removed, over the splice, being sure
 fron ithel $=w$ ant solder in between the wires and on end of "minh: The maken atmory plice and one that will last.

1- an emergency repair until a proper job can be done,
 stopping a gasoline leak. The soap is pressed on with the
 wiped off
 1/at the hera way to remove spents from rarnish is to rub in
 1.小. il-Mncard, afterward removing the superfluous oil and polishing with in soft las.

The usual method of inspecting the brake system is
 matter of fact, all parts of the brake system ought to be town evory two wereli- The gine and clevises should be
 lwa'ill-s has frozen because of rusting. The condition of H. Inak. Inin- houll be examined and it must be as...1t ined that the action is uniform on operation of pedal in lenew. S.a. that all fins and nuts are properly, secared liv laitions or some other locking means. Likewise the bearings should be oiled.

Whin a uovere i- lust. cure Hould be taken not to pour

 i.. ....k them, due to the rapid contraction which takes 11....


IT IS only natural that motor car owners who seek freedom from mechanical worries are attracted to the TEMPLAR.

So smoothly continuous is its everyday performance that consciousness of the mighty motor under the hood steadily diminishes with years of use.

Through the great satisfaction of owners over its improvement in smoothness and power it is known as the motor that improves with use. The longer owners drive it the stronger is their praise.

The hushed velvety action of the motor has inspired the fine coach work of the TEMPLAR.

Two-Passenger Roadsters and Five-Passenger Touring Cars in Stock

# THE CENTRAL GARAGE COMPANY 

## Exclusive Agents for Central China

'Phone C. 3809.
SHANGHAI.
2a Jinkee Road.
"Boost for Good Roads in China."

## BODIES THAT ARE BUILT IN CHINA.

## Cashwark of Shanghal Man Firms Risals 7 hat of Fraign Bu:ISers

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Graceful curves gice a
pleasing effect to this
China built W'illys-Kuight
limousine. The body is
black, the wheels white
and the equipment most
modern.

Courtesy The Central Garage Co., Ltd., Shanghai.

An excellent adaptation of straight and curved lines in a limousine body on a Cleveland chassis. The body and upholstery are slate grey.


Courtesy the Lastern Garage. Shanyhai.


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Courtesy II. S. Honiggbery and Co., Inc., Shanymi.


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wheels white.


# GERMAN MAKERS ARE ACTIVE. 

Have Long Waiting Lists and Many New Expansion Plans.

By a Continental Correspondent.

GERMANY'S OVERWHELMING DEFEAT in the late war has given rise to the general impression that the country is crushed industrially, financially and otherwise. It is natural that this same supposition would exist among the makers and distributors of motor cars. However, the recent offering of German-made cars on the English and continental markets and investigations of the home demand give concrete proof that such a conclusion is wrong. The German makers are going ahead, under difficulties, it is true, but nevertheless they are making progress. The demand for German cars that exists within the country is best indicated by the long waiting lists that aprear on practically every manufacturer's books. It is noticeable that there are more prospective owners of the larger, heavier, and better known makes abroad than there are in the country itself, while the demand for the small and light cars, such as the little Opel, the Wanderer, and the Phanomobile three-wheeler, is far greater inside the Empire than it is abroad. In other worts, the Cerman motorist does not expect immediate relief from the present buge cost of running and general maintenance; he must therefore have a small and economical car if he is going $t$, use it all day and every day as a business asset. If, on the other hand, he is not going to use it as a business asset, hut moroly as a luxury, the demand for the lager and more prwerful car would be greater than that for the small : but, as mentioned before, the situation is reversed, hence the assumption that motoring is regarding in Germany as a husiness asset rather than a huxury. The industry is therefore reinforced by the constant demand calused by the stomdfast desire of every (iemman to own a car as an asset to his general efficiency and usefulness.

As regarde production at the present time. How emodition of the facteries is undoubtedly faromble when all the handicaps are taken intor consideration. Thut of a mbols total of sixty (ieman motor fartories no fewer than twont five (mone likely thirty) of these are mow in pondotion.
 merned safferient raw materials to incerease the ir preduction well above the pre-war figure When one lake into ath sidematon that the period of the gratest ponsurit that

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 bads, and is severely handicapped if the mad ame hat. 'The present Geman Govermment has, ever since the diay of ils
birth, taken the greatest pains with road mainfenance and repair, for that is all that is necessary. The roads were constructed in the first instance by an industrious race in the height of their prosperity. They were designed by military brains, and they were laid down for the main purpose of facilitating the rapid transport of great bodies of mon and moterials hy road from one side of the countre to the other. Since the Cerman roads have heen undergoing a. "course" of rapid repair work ever since the abdication of the ex-Kaiser, there is ereey reason to believe that their fee-wn endition has he this time loen restored.

One of the most important problems that the motor mamfacture has to ennsider when launching nut into the expert market is making the car to suit the land. Imerien and Gemany are the only two combries in the Noth which have succensfully irembe suressfulty) trakled the expert market. The lmerican car is binitt on suit the Ameriean roads and the American motorists, and it so happene that the cenditions to be met with in Imerica are practiealle. identical with those in such coumtrios as Sonth Ifrica. Instalia, Tollis, and Sow \%ealand. On the ether fomed. the Creman car is lanith fer the reats of the "Taterlan?". and it: motorists and it likewise so happens that tha comilitions met with in Gemmany defere the war weme itentieal


























TRUCK BODIES THAT CHINA BUILT.



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# FIREPROF YOUR GASOLINE <br> WITH A <br> <br> JOHNS-MANVILLE 

 <br> <br> JOHNS-MANVILLE} FIRE EXTINGUISHER

It discharges a fluid that is deadly to burning gasoline, oil and grease. It will kill incipent fires before they grow dangerous and do it more quickly and more surely because of a distinctive operating feature, which is this:

You may use the machine as a pump to discharge it, or where space will not permit of pumping, the Extinguisher may be discharged by stored air pressure.

This optional operating method is an exclusive feature of the Johns-Manville Extinguisher.

It is an essential part of your car's equipment.
Ask your garage man or dealer to demonstrate one.


# Can be operated by anybody, in any position, anywhere. <br> Johns-Manville Automotive Equipment 

## The Kosmer Company

San Francisco, California,
Exclusive Representatives for the Orient.

## PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER CARS











## haUl by Truck

(Published in behalf of the Troule and Truchong Interots in: ('mme).

## BRITISH MOTOR SPECIFICATIONS AND PRICES．








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（616）$\because 75$$\begin{array}{rr}1.225 & 1 \\ 355 & \\ 125 & 1 \\ 100 & 1\end{array}$

PHGENIX. 4-cyl. $69 \times 10011.9$ h.p. Chassis 3 -seater
RICHARDSON. 2-cyl. $85 \times 858$ - 10 h.p. 2 -seater
RILEY. 4-cyl. $65.8 \times 11011$ h.p. Chassis 2-seater $\quad . . . \quad 620$ 4 -seater Touring... 650 ROLLS-ROYCE. 6-cyl. $114 \times 121$ 40-50 h.p. Chassis... 2,000 Complete 2,500 to 2,800
ROVER. 4-cyl. $75 \times 13012$ h-p. Chassis ... ... 615 2-seater ... ... 735 5 -seater Touring ... 775
ROVER, Light Model. 2-cyl. 8 h.p. 2-seater ... ... 300 RUSTON-HORNSBY. 4 -cyl. $80 \times 13016-20 \mathrm{~h} . \mathrm{p}$. Chassis 550 5 -seater Touring 630
SINGER. 4-cyl. $63 \times 8810$ h.p. 2-seater .... ... 500 SIZAIRE-BERWICK. 4-cyl. $95 \times 16025-50$ h.p
5 -seater Touring... 1,600
STAFFORD. 4 -cyl, $69 \times 12011.9$ h.p. Chassis ... 400
4-seater Touring 495
STANDARD. 4 -cyl. $62 \times 1109.5 \mathrm{~h} . \mathrm{p}$. Chassis … 555 2-seater ... 595
STAR. 4-cyl. $80 \times 15015.9$ h.p. Chassis ..seater ... $\quad .$.
2-seater ... ... 950
5-seater Touring $\quad . .990$
4-cyl. 20.1 h.p. Chassis .
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825
1,065
850
4 -cyl. $85 \times 13220$ h.p. 5 -seater Touring.
750

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2-4 \text { seater Touring ... }
$$

STRAKER-SQUIRE, 6-cyl. $80 \times 13020-25$ h.p. Chassis 1,200
$\begin{array}{lll}2 \text {-seater } & 1,600 \\ \text { 4-seater Touring } & 1,650\end{array}$

## British Show Set For November.

(Continued from Page 18)

Emscote.
Eric-Campbell.
Essex.
Farman.
Forster.
G.N.
G.W.K.
H.E.

Haynes.
Hispano-Suiza.
Horstmann.
Hudson.
Hudswell.
Itala.
Jordan.
King.
Kingsbury Junior
L. M.

Mackenzie.
Maihohm.
Muscotte.
Mathis
Maxwell.
Mercury
Milburn Electric.
Mitchell.
Moon.

Mors.
National.
Packard.
Paige.
Jerfex.
Richardson.
R.I. $C^{\prime}$.

Rolland-Pilain.
Ryner-Wilson.
Th. Schneider
secqueville-IToyan
Sigma.
S.P.A.

Spyker.
Stafford
storey.
Thor.
Turcat-Mery.
Unit No. 1.
Vandy.
Vimlar-Wioods.
lisisi.
IVarren-1 ambert
Wiesturnd.
IVinton Six. Kailler.


## AMERICANS HAVE FLIGHT CONTEST.

Shanghai Aero Club Was Asked to Enter Representative.

The American National Airplane Ratere, consisting of a transcontinental flight from Mineola, Tong Island, to San Francisen, for the Pulizar 'Trophy and cash prizes hewan on October 11. According to the rules of the contest all flyers hold a pilot's certifieate of any nationality rewenized by the Federation Aeronautique lnternationale were edighbe to fonter and late returns imblated that the number of sontestants would be comparatively barer 'The then limit fore atarting was Oetober 1is and the thight must be completed ho November 20 .

Farty in september the lew (luth of shanghai was asked to send :an entrant but sime the dhil has ouly one fleer who has a plame them was no oppertmity wo acoept. The invitation was extemded be the Aeror Clut of Imertion the organization which is directing the event.

It mat be mentioned mox that the mmber of acees




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## SIX WHEEL EUS MAKES DEBUT IN U. S.

A Prylley Gar an Rubber Tares Used al Gondyear Faciory.





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 flusu in the hody which are cut high to permit experiments
 Ahmonal the in manited either on six or eight wheels with


## CEYLON TO HAVE MOTOR SHOW <br> Britush Makers Are To Be Favored in Exhibits.

 than thamentare then of 'alon and the Cerlon Motor Draille. I comention for the purpose of organising a motor
 Hocel it chi. Alow. is to unf. British manufacturers every ihum ia this market, as the trend of events shows that the

 - "untro:


Beautiful in Design-Thoroughly Modern-Mechanically Right
The Shanghai Horse Bazaar \& Motor Co., Ltd.
36 ? Bubbling Well
Phone West 1641

## HERE'S ANOTHER FUEL MYSTERY.

California Inventor Claims New Substitute at 1Oc. a Gallen

Where if the motorat aton har net hand of the



 W. $11{ }^{1 /}$







 raturs the tum with his little green bottle agin, and this

 arpriments conducted in an outhouse in the rear of his
















 practically every make of automobile and marine engine during the last month, and the tests show that the fluid






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## PERFECT NEW ANTI-SPLASH GUARD.

British Municipal Regulations Require Motors to Wear Them.

Manimal mentatome by Reritish rities for the


 Com iderable attention and ingenuity are being directed at the present time to the desimn of thene anti-splashing thevent In the natomparying illn-mation- will be seen ane of the latest devices to be patented. This consists of


 frime hy two -mall ormkel amms is a metel hier, from which dout hapth- of a special chain are suspended. The links of the chain are so formed that should a link break it may la. seplaced quite easily. Is will be seen from the Alu-tration, the chain forms a screen which should Fhenticely intempt any mullphaskes thewn out by the annt:ct of the wheels with the road. In order to prevent dumane to the fitsing. a small lallembed leve: mgages with a cann secured to the forward spindle or fivot of the swinging har, so that when the ball comes into contact with the hantal we the -wheing har with it- Ikpendent chain screen Is limed chan of the tyre and camot be censht between the curbstone and the side of the tire.

Tis efint this lifting movement it is necessary for the bill-wded lewer the he mesel sideways, and one impgines Ulat should the device encounter an obstacle with a direct Hisw. tho the whinty of the tram- wouth effectively frevent the possibility of any dime. -
in the matter and, under the contract, is to receive a royalty of one coml per pallon on the entire cutput of the company


Themical: wed ly Mr. Meyers in making his elixir of Lubtor llf. ate al fraently inexpensive, as he claims the thuid can be manufactured to retail for 10 cents per gallon. In attmpt was make. it in understood, by a company Promailly ventroling the gatoline market to buy the formula patent for Meyerline so that it might be kept off til. ins.ant and not become a substitute for gasoline, but N... then who heought it are said to he organizing a company in it. $\mid \ldots \ldots$ and wall therin extem-ive monacture in the日进 fumere


##  HOLDER OF

WORLD'S RECORD FOR SIX CYLINDER CARS $24{ }_{10}{ }^{1}$ Miles per Gallon of Gasoline.

LIGHTEST CAR BUILT FOR ITS WHEEL BASE 1400 Lbs. Forward-1400 Lbs. Astern - Total Weight 2800 Lbs.

THE HIGHEST GRADE, COMPACT, GOOD LOOKING, PERFECTLY-BALANCED MOTOR CAR BUILT.

# SHANGHAI MOTORS CORPORATION 

14 Canton Road 237 Lungmen Road
Phone Cent. 5096.
sHANGHAI
Phone West 2004.

## EUROPE MOTORS DEPRESSED.

Adverse Condtions May Close Some Factories-Gas High.










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 15. bus wohmer and many ofbers are likely to tee dismisad.
 tem to 150 a month and the stes hive arenuge 1 only atome 200) a menth. The consegtrence is that then is men on himed a stock of 1 , iou temeks.

The new low-puced cas whill was th le mate in a huge uew futory which Berliet has virtually completed at Vemssieux near lowess is thet get in prodiaction. Work has faxn bertu, howover, in many of the shops.

 for the delay is froductoon is that thoustmis of tall licarmefied to be serapluel as defe tive.



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 omployed 2,000 men and turned out s, inn vallo $1 \cdots$ a ! in ir.

The Italian automobile industry is sorivusly al.irm d a





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ITwatent .lemelh of the Fat sompany infamed the Smialists that unless the Government modifies the decree
 within a sear. This fropect has os alamed the whinats

Ih: thers age millon- to forn in on aghation for the repeal of the tase when silt vortally kill the abmomble: business


Another factor which has lessenod the demand for pas--ane.n bate in In mie is the sterdily ming price of gantline. Another advance, just announced, makes the price


 pratent for elevator and aileron control. He claims a total
 flome hath dhang the war. 'The divinion of the claims would lo..

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The imms- have पfla id the: Pelterie Iratents but the
 palent to the sughome tome 1 , reize funds held by the shle on behalf of these firms. The manufacturers assert timy will chat 1h ir famionios if the court orders payment 1. Pethere cout of these funds for the money already is mortgaged and an adverse decision would cause the ruin of the entire aviation industry.

A private company representing all the leading airplane makers has been formed to dispose of surplus French army aviation material. The capital of the company is
 the profits. It will require three months to prepare inventories of the aviation material and frobably three rears to dispose of the stocks.

## NOW IT'S " TRUCKPORTATION."

Motor Freighter Coins New Word in English Language "Truckportation."

"Trably.ation in" is a bew wowd tha:t may become a

 .hil) if the wrlten on the primed fate, and is a legitimite addition to the special vernacular of the truck industry. Tiee matr whele jmbllus is sow next to steel in imI masion atal las. samally: craterd a technical and common language all its own. "Truckportation" is one of the largest economic factors of present-day life, and is Alowive in pran and imporame liy leaps and bounds. It m..nht a mprehensive, easily used, designation, and this n'n word seems well suited for the purpose.


## ANOTHER NEW CARBURETOR

The Miller Type H is An Ingenious Mulu-jet Instrument.






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 Etral Alo. mant anfi of it jet thls.

Phas, it will te tern that ans funther cherning of the shambe produces a slightly enrichened mixture momentari-


 Prayg-laded arsolans chlve, and hat its primeipal effect one cha fir cheot of the thotils rance. It admits a certain :mment of auxiliary air during the first part of the throttle
 a $\quad$ mil - four tic:ally inoperative as the throttle is fully opened. It can, therefore, be used to control the character of the Fif komp. Atmuphlain_ the suins enriches the mixture, Which gives better acceleration.

I Baments ahewe at in the air intake is provided to prube a rioh misnum foy: stulting from cold, and it should ter notud that the needle valve in the float chamber passes
 and prevents wear. Ohserve also the substantial filter at


## GAS PRICES IN BRITISH ISLES.

This fallowemp wor the current retail prices of motor


 proum miled all over Enyland and Wales. In Ireland and
 - Al tal lambolo it una 14 ald in Treland 3d. more per - UlVer Su asto limpan at the rate of 1 d . per gatlon was mado fu - He a ritin- Int any quantity less than 2 gallons.

## MORRIS-OXFORD <br> LIGHT GARS II. 2 H.P.



Overall length, 12 ft .9 in . Overall width, 4 th .10 in .
Engine bore, $69.5 \mathrm{~m} / \mathrm{m}$. Engine stroke, $102.167 \mathrm{~m} / \mathrm{m}$. Number of Cylinders, 4 (four).
Cubic Capacity, 1550.40 c.c.
Ground Clearance (front) $8 \frac{1}{2}$ inches.
Ground Clearance (back) $7 \frac{1}{2}$ inches.
Weight of chassis $14 \frac{1}{2}$ cwt.
Weight of Two-seater Car, complete, 16 cwt . (approx.)

Weight of Four-seater Car, complete, $17 \frac{1}{2}$ cwt. (approx). Speed of Car on direct gear, 4 to $45 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Petrol consumption, 30 to 35 m.p.g.
Wheelbase, 8 ft .6 in .
Track of road wheels, 4 ft .
Diameter of turning circle, approximately, 35 ft .
Width of chassis frame. 2 ft .
body space from dashboati to end of frame. dife. tim.

High tension Lucas Electrical Co., Magneto, with which is combined a Lighting Dynamo, known as the "Magdyno."

## LOW GASOLINE CONSUMPTION

$$
30 \text { to } 35 \text { MILES PER GALLON (U.S.A.) }
$$

Deliveries from Stock.

## THE CENTRAL GARAGE Co.

Exclusive Distributors
SHANGHAI.
2a Jinkee Road
"Boost for Good Roads in China"

## FRONT DRIVE CAR DESIGNED.

















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Arnf the provertial cucumber. The numerous hairpin


 skidding
 wontinent of America. The start from Los Angeles was made
 Highway from Oakland through Ely, Salt Lake City, Che-


## REDUCE LONDON-PARIS AIR RATES.

Air Line Introduces New Type of Plane.

According to the American Chamber of Commerce in !anathan if bew on in matb fisins will be opened up by the comore ne... at the matuction in the passenger rates on
 from $£ 1.515$ s. to $£ 1010$ s. for single fares, and return fares trum "th on $\ell 19 \mathrm{~s}$., which includes conveyance of pas-
 - mvilin leroltrome, and from Le Bourget Aerodrome to the conter of Paris.

Too inumbiotion of sumes tho of -inmle emgine expres, carrying 8 passengers instead of 4 , has made this possible, (4) the American Chamber, and it is expected that the time taken in the flight will also be materially reduced at an early date.
 whe dipai wheremen cmols for petrol, has reported that the imahinting of pwer alcohol from foodstuffs is not econo-4n-ully possible in Eingland, and the production in other $19 \cdot 1: \frac{1}{1}$ of the empire on an adequate scale is not yet practicalle.


## NEW YORK AUTOS VIE WITH WAR

## 4084 Casualties $w$ ithin the Past Five Years China lani the Only Country of Auto Casualties









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 reckless driving．Fifty－nince were ara and ．on－．hatge w

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## 1920 BRITISH AIR EVENTS．

## Cargo Flight to India Offers Greatest Returns．

Numerons and important aerial events are echeduled for








 ！lition for large and small airplanes and seaplanes．The


 september 1





 （1．） $16 \mathrm{~mL} \cdot \mathrm{-}$ ：


## ANNOUNCING

＋THE FORMAL OPENING OF THE

## GRAND GARAGE FRANCAIS

Under the direction of Mr．Philippe Osterberger，
Wednesday，November the 10 th， 1920. To Arrive

ROLLAND－PILAIN Chassis， 4 －cyl．， $12-14$ H．P．arriving next French Mail．
BRASIER and DE DION－BOUTON Cars，tivl． 10 ami is it．1＇．arriving shmell
DE DION－BOUTON Trucks 3⿺𠃊⿻丷木女⿱⿰㇒一乂夊心 Tons，arriving about December 1st

## In Stock

CITROEN COUPE，3－Seaters USED CARS， 2 and 5－Seaters RENAULT TRUCKS MICHELIN TIRES

DEFIANCE TRUCKS
 of Repairing，Painting and Overhaulins．

## AIR CURRENTS






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 amber after havita fown in the air for 21 hours 23 minutes
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 They leave the former city in the morning, arrive in Clevenin: in unin and return br 5.30 o clock in the afternoon.

 Immom: Fliladelphia, Pemsylvania, and Buffalo, New
 -. The un- lim. - M...| we converted 110 ft . span, fitted


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## LET US BUILD YOUR TRUCK BODIES

As we Own and Operate the largest Motor Truck Fleet in China
it follows that our Body Building Facilities are the best.
Sole Agents for GARFORD and FEDERAL Trucks
Chassis in stock in any capacity

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## FEDERAL

$31 / 2$ TON
TRUCK


# ENGLAND HOLDS ROAD CONFERENCE 







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 1. Wher K. R. F... J.s.o., l)irector of Stores, Admiralty;








 amd Einerimere: Mr. II. H. Ross, O.B.E., oi Edinburgh;

 Simith, nominated hỵ Institute of Automobile Engineers;

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## Jordan is Possessed of Builtrin Personality Giving it a Wide Appeal.



A side-view of the

Jordan Play.boy

Sportster.

In these days of mass production in the fied of the automotive industry the prospective buyer in losking over the new models of well known makes often experiences a tinge of disappointment because of a studied sameness in the liness of the car exhibited. It was probably this feeling which prompted the makers of the Jordan to cmbrody a style which is "just a little different" in their product.
traveled a combined distance of 12, . 5 te miles, ateraging 24.1 miles a gallon over all types of roads. The highest average was made in New York at an average of 32.92 miles a gallon over a course of 460.9 miles and the next highest at Minneapolis that of 31.11 over a distance of 453 miles.

Four years ago the Jordan people produced the lightest car on the road in the United States for its wheelbase, realiz-

While the Jordan has been in the motor field of China for several years, it has been limited in its representation in so fir as numbers are concerned and is now coming into the success it richly deserves. The sole agency for the make has been taken by the Shanghai Motors Corporation, a newly formed American firm which has just broken the ground for the future.

The Jordan is a car of dignity and character possessing a built-in jersonality that gives it a wide appeal. It has a sturdy six cylinder motor which defeats the forces of vibration. Weight is scientifically distributed. The steering mechanism and spring suspension is delicately fixed to eliminate side-sway. In body design it represents the highest type of present day conceptions. 'I'ouring loodics ir a little more slender with a ment fremel angle at the dash. It's other hodies are of at custom buit perfection Comfort and luxury are expersed in dhe armanemboll of its seating and upholshery. 'The mestion at the whan ha
 Standard cond lires, an imstrumem hoand that is lamhal :mel at the same time pleasing to the eye, all almmaimm lombue and artillery wheels complate the mahe up













## GERMANS PLAN AIR LINE TO U. S

Zeppeim Servace Berlan 1o San Franzisio May Srart Next line.






























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## U. S. GAS IS LOW IN QUALITY.

Bureau of Mines Test Shows Fuel Not Up to Standard.


 finis wint then !as lien a greater decrease in the volatility - Imerican motor gasoline than can be accounted for as
 ing to at rocent report. These findings apparently bear out the contention of American automabile manufacturers and dealers that the low grade gasoline now being sold throughout the country is chiefly responsible for the complaints

-bmplas at wour घatalhie were colleated from seven Ithe of oftome at and atotage fin the country. Judging flum 1h. eighty-two samples there were many evidences $\therefore$ : sulteration with kerosene. Likewise, the Federal in-

 increase in the average boiling point of the gasolines San Francisco ranks first in quality. The average boiling point of the pmounts in ille Tanific const city is $2 T 0$ dear. Fahr. D.... homk ranken …vnd with a standing of 2 T.2 deor.
 and Mashington, New Orleans and Salt Lake City had the ©....... uroda.

The reason for the failure of automobile engines to function properly is explained in a statement from the Bureau a. Viums ilat samples of motor asaline were found which Mnnemmen of much high boiling material that it was imI....|hl. - Wentmine the end point by means of the standard dictillation thermometer which covers a range up to 518 A. zman

There is no secret in the success of the "Karrier" ; it is just due to a unique policy in motor vehicle manufacture which never will tolerate the secondrate or next best.

The integrity of "Karrier" construction and design is based on this vehicle's unimpeachable quality. That is why the "Karrier" is known as the more than usual lorry.



A typical 4-ton "KARRIER" lorry fitted with flat body. Note the commodious, weather-proof cab.
The "KARRIER" is the more than usual lorry. What has made it so? Why the "Karrier" policy of production, which has ever recognised the fact that the success of the future depends on the success of to-day. That to win success and keep it, you must give something better than the next best. That quality must be the deciding factor in the selection of materials, in machinery, and workshops organisation, in assembling, erecting, testing and finishing, the best in everylhing must come first.

Write for Catalogue.

## KARRIER MOTORS, LTD. <br> KARRIER WORKS. <br> HUDDERSFIELD, ENG.

## U. S. AUTO TRADE GROWS.

## Comparison of Development From 1904 to 1919.

Growth of the American antomobile industry since 1904 is indicated in the following tabulation, compiled from figures furnished by the National Jutomobile Chamber of (ommerce. It shows capital invented, motor vehicle prodne1ion, value of production, persons engaged in mamuficturn and wages and salaries paid in 1919, 1914 and 1904 :
Capital

Invested
Vehicles produced Value of prod'tion
Persons engaged
in manufacture.
Wages and salaries
$\$ 813,731,856$
$\$ 139,453,000$
1904 *
$\$ 23,084,000$
$\$ 1,802,302,862$
1,974,016
\$2,566,834,594
651,450
$\$ 8,416,000$

* From United States Consus reports.
$\ddagger$ Estimated from known statistics of motor vehicle manufacturers, with assumption that parts and accessories business has shown same rate of increase.


## TURNING CORNERS



 pensitere ruhther at the stme time?

## THIS IS THE MARK ON THE

 m STORAGE BATTERIESMADE BY US
We make Batteries 1on every Purpose, vis:-

Motor Cars
Motor Boats
Wireless Teiegraph
Submarine Boats

Motor Cycles
Railway Trains
Telephones
Night Watch Lamps
Household Lighting, etc.
Complete Stocks Carried in Shanghai
WRITE FOR Clatalogitis
The Kobe Electric Works, Ltd.
SHINGHM13R INCH
129 North Soochow Road, Shanghai.
Telephone N. 2934.


## IMOTOR PROSPECTS IN CHINA.

H. H. Fox of British Commercial Service. Says British Chances Are Good.

 Trader," lomen, and reputbithed here heconace of its lowal interest





 steve. The Ghane are mily anve to the prosthith ... if








 Chinese for private cars with brightly-athment iodies anl

## TEMPLAR HANGS UP RECORD

Lowers Time in Road Race from New York to Chicago.

The Thempar (atr drixen her "Camonball' Baker, in a
 lowered the American record for this distance by 6 hours and 10 minutes. The entire distance of 992 miles was covered (1) -1 loms and in mbutes, averaging a speed of 36.97 miles per hour. This feat is rendered more meritorious by the fact that it was accomplished under unfavorable road combumes. Iths rae had a donble purpose, first and !rimarily to attempt what it accomplished, and secondly to - $1=$ an army recruiting stimulant. It was because of the latter reason that it was named the "Army Recruiter." Nowetup were delivered from Lieut.-Gen. Bullard of the IV ant Dept. to Major-General Wood of the Central Dept. and in all mayon of the cities through which the car passed,
 - land a Camp Citme. I.hnons.

[^40]
## Timing the Speed King's Flight.

(Continued from Page 8.)
tion of the second disk "kicks over" the minute disk one notch.

A small steel wire stretched across the speedway course connects with the timing instrument. Whenever a car paisses over the wire, the contact through electrical stimulus causes the timing device to record the time. A striking arm above the four disks strikes on à strip of paper, registering the imprint of the numerals on the four disks. The machine recovers from each operation quickly enough to permit another registration with less than five-hundredths of a second elapsing. On a machine running 60 miles an hour it is thus possible to catch the time of both the front and rear wheels as they pass over the wire, the two registrations showing four-hundredths of a second difference. But when a car is exceeding 60 miles an hour the rear wheels do not register, the front wheels depressing the wire and the rear wheels whizzing over before the wire can rebound from the first impression.

As each car passes over the wire, an assistant calls out its number, the timer making this number opposite the time recorded on the paper tape which is shifted forward with each registration. Scorers tabulate the laps made by each car, while the timer's assistants, by subtracting the time of the preceding lap from the last registration made, obtain the lap time and from it tabulate each car's complete lap performance and total time.

When Ralph De Palma in his white lightly built Ballot qualified for the Speedway races on May 26, he made a new track record, ripping off four laps, or ten miles, in the total time of six minutes, three and eight one-hundredths seconds, for an average speed of 99.65 miles per hour. At the start of the qualifying trial he crossed the wire at a time recorded by the clock as 6 hours, 50 minutes, 18 seconds and 233 hundredths seconds. When he completed the first lap the liming instrument registered if hows, it minutes, 50 seconds and 6 hundredthes seconds. Subtaaction of the first time from the second gave 1 mimute, 31 and si3 hundredthe: seconds-the exact time of the lap. This operation was repeated for each lap, the fastest lap being negotiated in 1 mimute 30 and 8 hundredths seconds.

The tape, shown in one of the acempansing photographe, on which De Palma's four record-breming laps aro recorded, shows the following figures:

|  | 11 rs . | Min | Sur | 11 mm |
| :---: | :---: | :---: | :---: | :---: |
| Find fourth lap, | (i) | 水 | $\because 1$ | 31 |
| Fnd third lap, | (i) | 51 | S1 | 23 |
| Find second lap | 6 | is | 21 | 73 |
| Find first lipl | 1. | i 1 | i) | 1013 |
| Start first lipp | (i | 510 | 1s | 23 |

Tootal time fom laps, fi mimates, 3 and is humdedibs secomds. Lap time: First lap, $1.31:$ :sis; secomed lap, $1: 30: 67$; third lip, $1: 30: 50$; fourth ligp, $1: 30: 08$.

Speod, 156.0 .17 milus por hatis.

## Agilburn LIGHT ELECTRIC



## THE CONTROL IS PERFECT

To secure the full enjoyment of motoring, something more is neded than the comfortable roominess, the stylish upholstery, and lack of vibration of a Milburn Electric.

It requires a perfectly controlled motor-one which will respond immediately when the need for incraticed speed is crident and one which will bring the car to a halt when necessary to provent a collision or an acielemt.

When rou hate that, rou kmew the real comfort that comes fromd riving a car whose control is equal to every need.

Andersen, Meyer \& Co., Ltd.


Main Office Shanghai
Branches in the minciple cities of China.



## RETREADING <br>  <br> VULCANIZING <br> AND <br> REPAIRING <br> ANY MAKE OF TIRE OR TUBE <br>  <br> retreads <br> guaranteed <br> 2.500 MILES <br> NON-SKID <br> PLAIN OR RibBED



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Cherges aroy Reawnahle

## SHANGHAI VULCANIZING Co.

c. $i$ to 111 VDOVC ROAD sHANCiAA

 A. -aush than afto ain!. You lave lamula the



The "YasorskE" Paliey aisirs the nomest poastible procictions atol is the


## RING UP THE

## YANGTSZE

INSURANCE ASSOCIATION. LTD.
Shanghai Central 5475
and ask for a prospectus.

The History of the "Lightning.Wagon" in Peking







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 Inta fle oplual, doo If this company. is a thirty-setere thashank ing whet ham.a.e. io Iurclaver las heen fremel at the jim-at shaug.

If mulnu.s. I. It he pinted ont that all that has twan ityme in it. notus as market in Peking, as indicated iy the hacut restume above, has been since 1914 and during

## THE AUT0-PALACE Co. (British)

362 Avenue Joffre, SHANGHAI. Tel. W. 465

## Practical Motor Engineers.

## Agents for Renault Cars and Trucks:

## NOW IN STOCK

12 H.P. Torpedo, $11 / 4$ ton Truck fitted with six $820 \times 120$ Pneumatic Tyres (Cords and Non-Skids)
$31 / 2$ ton Truck fitted with 6 Solid Tyres.
Briscoe Touring Cars, Taels 1,500.00.
Diamond T Trucks, $21 / 2$ ton and $11 / 2$ ton in stock.
Michelin Tyres: New Stocks have just arrived, all sizes including Straight side Cord tyres, in both types. COMPLETE OVERHAULS AND RENOYATIONS.

## CARS FOR HIRE-Tel. W. 465.

HAWKER LIVES A CHARIVED LIFE.

Australian Airman and Motorist Refuses to Be "Got" By Accidents.

Harry (i. Hawker, the intrepid Anstralian airmun whose spectacular attempt to cross the Atlantice is still freen in the world's mind and who as a motorist has earned the tifle of "the man who won't be killed," had a wonderful esseaple recently at Brooklands. While he was testing is $400 \mathrm{~h} . \mathrm{p}$. Sumbeam motor cas, and travelling at a terrific speed, it dashed off the track, tearing a gap in the corrugated iron fencing the size of a honse. The nosic of the car was smashed, hut Mr. Hawker coolly alighted, stomed beside his damaged car, and invited the photographers to "snap" him. In the efternow he wom a tace at 99! milen an howr
war fime. Ilith so firm at fomdation for the metor trate
 of manulacturess to fill orders, excensiow freight bates amb lack of shipping facilities, what may we met wow tow the motor car and related products, will hase hamduaps b.... moved, in the era of development which strothlos: ahowe of us?

Hawker can mow wht mode thrilling essey es than almost any orther living man. Here are some of his adventures

August, 1913.-W When be made his gallent attomy in "in the "Daily Mail "Romal bimain" Mighu prize hie met with an aceritemt in alighting off Duldin.

 mompital.



 smatherd.

 dallume 1

[^41]



## U. S. NOW HAS $7,904,271$ MOTORS.

New Registration Shews a Car For Every 13.52 Persons











 comers



















 wrder to equal the 1919 total, while California is 72,136 f. hat at the mill-gy mak. Vew lork' - defluit amomats



What tow 1999 papmbition i-linnat - as a bacis, there


 f.in jon-an- in the I nitue I Statis: that is, every one in the Domars mos the alife 10 of ammolite riding at the same

 Laving one car for every 5.5 persons, while even Mississippi, whide is 1 the imntom of the liot in this respect, has aivaned fiven is ta :35 perme per car.
lifonoth a ine figmes as to the mumber of trucks are
 fure since mare statio are lu-ziming to sogregate those re-L-atauots R Rumin= on the lasi- of twenty-seven States





 deamy that the tot n number of motor cyeles in this country las decreased apreciably since last year.

# WE SPECIALIZE IN SECOND-HAND CARS! 

## ARE YOU <br> buying <br> OR <br> SELLING?



IF BUYING it will pay you to watch our stock of second hands which changes every day. IF SELLING it will be worth your while to see us before disposing of your car.

## WE HANDLE HIGH GRADE CARS ONLY-NO CHEAP MAKES.

We also have a number of Motor Trucks in various capacities ranging from $1 \frac{1}{2}$ to $3 \frac{1}{2}$ Tons.

# Demonstrations <br> Cheerfully Given <br> <br> THE AUTO CASTLE 

 <br> <br> THE AUTO CASTLE}

## SHANGHAI

## Marles Steering Attracts Attention.

(Continued from Page 30)
normal position, namely, straight, and when the car is being driven straight ahead or but slightly diverted, at any speed to the maximum the leverage available to the driver's hands is vory considerable, far more than that provided by the usual type of steering gear, and by comparison the latter would require a ratio of 9 or 10 to 1 , instead of its usual 3 to 1 , to enable the same amount of leverage to be produced.

At half lock the leverage of the two types is pactically: the same, so that on right-angled corners there is molthing to choose in this respect, bat from this proint up to full hork the Marles leverage is gradually redued matil almost the offect of direct stecring obtains. As a result of this idesign. the amount of stoming wheel movemont neeessaty (o) ditert the front whools from straight ahead to full look is the same in the Martess sterering as in flo worm amb sexment tym, and yed the former provides the greater lexame when it is roguired (i.e., at high speds), and in this wily armenmes the need for any degres of irmerersibitity.

After all, irrovorsible stooring is very nico for tho driver, but it is bad for the earr ; it impreses strmers ugen the stoering levers and eombertons whith on the Marks steering we absorbed by that intanghbe litetor, lownge.

## JOYSTICK INTO COURTS.

French Makers Being Sued by Alleged Inventor.
Much interest has been atrued on the continent by the ation which ir. Robert Fismante


 mester patest for the joystick contmol of applate and is




 mather over ea, 500, 000 . Shouk the action be sucedsful, it is stated that tho following amomen mombl hase to ber






 that the construders in prestion hase deched to does them works shoukt they be called upon to py thea sums.

## MOTOR CAR

## INSURANCE

THE COMPREHENSIVE POLICY
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## ALLIANCE ASSURANCE

 COMPANY, LIMITED (ASSETS OVER £24,000,000)Affords FULL COVER to Motorists,
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(anphding lamp and accessorics) by-

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Fire, Lightning, Explosion or Self-Ignition, Robbery or Theft or any attempt Thereat, Malicious and Wilful Acts by any Persons.

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Can be included in the Policy by Arrangement

## ABSOLUTE SECURITY

PROMPT AND LIBERAL SETTLEMENT
OF ALL CLAIMS.

A1:IENO S-
JARDINE, MATHESON \& Co., Lłd., SHANGHAI,

[^42]FORD NEARING 4,000 A DAY.
Record Reached July 22. When 4,200 Were Built.
 is ay年
 D-b-wre built, the fisctory came along in August with a






 porcilowa in in. flant pisut

What of the Used Tire?

## rounamit mas I...n !




 "Emelly this profit is obtained by reason of the higher price ane rimet tom - ne of the luces in the lut. It is quite pensible


I blown out sille wall. -avl!! lumallad b!y a skillful repairer. Since th. lire is purnbubl!! Alumless otherwise, it "liyht l," emonsillored " aticul hiny when repmirel.



 il. it her


2- Futtoms or inmors: defective or wom tread with (a)
 What have no riment or bead defects unless repairable and foto
i. Imad: ily imal hightiy wom, tires with riments
 - pr 1
: Reliners: tire with round fabric but bead or rim Ifin : Worn treal, not more than one blowout.
i- Idjustment tires; tires that a gxp can obtain an at|emenen: wil
 tif. Itvm the tire manufacturers.


SHANGHAI MOTOR REPAIR COMPANY

11 Boone Road (Cor. Seward Road.)

SHANGHAI

'Phone N. 1951

CAPRONI FINDS WRECK CAUSE.

Too Light a Floor Caused Big 1919 Accident.

After a very close inquiry carried out by the Caproni Co. and the Italian military authorities, the callse of the disaster on August 2, 1919, to the big Caproni triplane arpears to have been discovered. Tlis plane broke up in the air, killing seven Italian newspapler men, seven mechanicians and two pilots. It was the worst accident recorded in the history of he:wier-than-air machince.

The central fuselage of the Caproni had of compatment placed just in front of tho engine, originally derigned to receive clothing and light baggage. As it wass mot intended that this compartment should roceive hoary lowis, the flowe was built very light. F'or the flight on Augnst 2 the herkers wore taken out of this compartmont and two seats fittent for the) Fassengers, without the preatantion being tikien of strongthening the floor. It is mow practivally certain that white in the air the fleer grave wisy, :atlowimg the twe joumatists to fall through. In their fall the two men wern
 they probably were killed immediately. Piowes of lmokem propelles tore the wingis and :llso probally wit off the tul of the machine, thes causing its fatl.

## NEW ZEALAND'S SHOW IN NOVEMBER.

Christchurch Exhibition Seeks Representative American Display.

The New Zeeland Olympia motor exhibition will be leeld at ('hristchuch Xins. 6 to 1:3. The manamers wist provide $40,000 \mathrm{sq}$. ft. of floor space and the show is exprected



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This thent is smmamiated liy the fact thot tw. of








 Lecぁ mate.


Every garage numb the hulpos a Nathon Coh Riginter-b-tem. Garage men everywhere endorse this system because it is the only one which places the management in Personal Control of the reventues and acements

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AGENTS:-
E. D. SASSOON \& Co., 9 Jinkee Road

MANAGER
E. E. PARSONS, 12 Hankow Road

SHANGHAI.

## SPEAKING OF THE MOTOR BUS.

New Zealand Journal Sees Vast Possibilities in their Use.





Tore is the allallitges of the luss as
 - ut




 high fares can reasonably be charged, and the thing thus






 in their vicinity villages nut sufficiently important to justify
 a! !1月.

 and residential suliurbs are gradually being developed, the
 their terminal points further out to correspond exactly to

 additional vehicles.


 whlemb kes of capital. In the older fortion of the town it mily bo that there are some narrow and winding roads, quite
 If: Whe a mile vithe whale. There maty even be central
 : 111 are impracticable. In such cases the preferential nherimil of the moton hus ëses without si!!ing. Another :alat ish.il has a vilue hoo Eleat to lee negleceted is that i. Imamwsy -yshran, with its rails and generally with its

 :, inlential portions of a town, the value of the adjacent !....dment Prmery is often seriutnly diminished. The whan: Gha. whole in it-elf not a thing of beauty, has the
 Hunt.

## DEPENDABILITY

THE FACT THAT YOU ARE DEALING WITH THE CENTRAL GARAGE COMPANY, INSURES YOU THAT OUR USED CARS

## ARE

AS REPRESENTED AND VALUE FOR YOUR MONEY we buy CENTRAL GARAGE Co. we selu FOR

CASH
PHONE C, 3809

USED CAR DEPT.,
J. W. DAVIS, Manager. shanghai.
"Boost for Good Roads in China"

MIONT CENIS RECORDS STAND.
Amatcur Drivers Fail to Shake Hill Climb Times.
Confined to amateur drivers, by roason of the decision of French and Italian car manufacturers not to race before 1921, the annual 123 -4-mile hill climb over the Mont Cenis fass, in the Italian Alps, in August, did not see any broken records.

This is the longest distance liill climb in the world and one of the most difficult, for while there are several cansy stretches the last two or three miles are practically all hairpin turns with severe gradients. The real interest of the race lay between Reville, the amateur driver of the 1913 Grand Prix Peugeot with which the late Gearges Boillot ostablished the Mont Ventoux record; ; 191.4 Piat Cinand Prix madine driven hy Count Masedti, and at $12-$-qtinder Packard fitted with a beentiful stream line rateng hody and triven by the Itatian Silvani.

These three were chosely matched, but on the hast hall nile the Fiat I lunctured and laded to run on a flat tire: ; How Packard cracked at pistom after groing "! the most diftionth nortion of the romte known ats the "Staitemase," and lienilles In his Pengeot came in at winner in 19 min. 51 siec , of in -2 see. flower than the reeord set up ly Perlice Nazzam an a hig Fiad in 190\%. The 1901 flat was beatem ly the 'ellgol with a margin of 27 sete.

ANOTHER VERSION OF THE WHOLE D-FAMILY.

 1-2n= !





## POW HANG MOTOR Co.

 HANKOW HIRE SERVICERepairing and Overhauling Motor Cars Motor Cycles and Motor Boats
P. H. Young, Prop.

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German Makers Are Active.

## 

domend of Civmany is pram thally afl for the small car, gives

flees, that the liver lyp of Cirman car will be de-
 abe damal therefore bed frose a particularly dangarons

 " 20 a ble! lafe estemt, to the rountris of Northern

serandys, thet the twalls "holemal" dermand for the

 experimenting with the designing and testing of new light


 if the 1.an s re-eatioh work

Thirdly, that since the combined home and export deman! for Gemman cals romfines itself in the main to the latee and loxurnu- car and the shall and ultra economical Iat, it is any fore that the flum mamfacturers will be alite to - peevialize on thee two types, standardization of components will lue casy, quality and quantity will be maintained it a steady level, and each manufacturer will be able to concentrate on one or other of the models. Several important consolidations have taken place, most noticeable of which is the G.D.A. (Gemeinschaft Deutscher Automolibfatuhem ; in this analgamation are the makers of the

 IVake at Bremen, and the makers of the Brennabor (well
 at lhandenburg. All these factories co-operate in their whil. a mann memtral wha secmes all the necessary raw
 these different cars; the net saving in overhead expense can woll the aftermat. It in ramomed in certain official German quarters that a new scientific speedway will shortly be dmited yuite close to Hanover; this track will be made of stoel plates over a foundation of trussed concrete. Its diameter will be five miles, and it will be one hundred and forty feet wide; within the diameter of the track it is pro1 .all to are a flamtic mathing contaning private aswill he prossible for the various designers to co-operate in sembling plants and testing laboratories; by this means it :t. Trimiz lie best results with new models on the track.

Ti... Rimmblie of limama has started work of buidding now palhae haghwas incolviner the expenditure of ap-


PNEUMATIC TIRES FOR TRUCKS.

The Story of a Truck which has been Operated for Many Years.
One of the leading American tire companies recently dispatched what is claimed to be the first motor truck to have been equipped with pneumatic tires, on a 5,000-mile


Close-up of disc wheel with pneumatic tire. Wheel has demountable rim.
tour of the country. The route covered 150 cities amd towns, the last scheduled stop being made at Washington, I). ( . This truck is one of three trucks put in service with pneumatic equipment in July, 1911, at the Detroit branch of the tire company, all three having boen operated on pneumatic tires until the present. The tires are mounted on steel disk wheels of the type shown in the illustration. It is thought by this American tire manufacturer that the long life of the tribek mentioned is atmost entirely due to the use of pmeumatic: tires, whith retieve lace truck of so much wear and toar incidental to operating over rough roads.

## MOTORS POPULAR IN PHILIPPINES.

Car and Parts Listed Among Príncipal Imports.
Reponts of the Insular ('olledor of ('u-toms lar the Philippino Istands show that automobiles amd antomobile parts were included in the principal imports. Ther momber of atomohiles imported for the calantar year l! 1!! was 2,557, ass compamed with 1911 in 1918, $1,2: 37$ is 1917 and
 The value of all artomobile oquipmont, including parta,
 1918, an inceane in vahation of 17.2 peremt, constitutim: 4 porcent of the total imports.

USE JOHNSON'S CAR SAVERS

## AND <br> KEEP YOUR CAR YOUNG

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## S. C. JOHNSON $\overline{\&}$ SONS

Johnson's Radiator Cement-seals leaks in two to ten minutes - in liguid form easy to use.

Johnson's Black-Lac--the perfect top dressing. Hasy to apply-dries in fifteen minutes-is permanent, waterproof and inexpensive.

Johnson's Auto-Lak-enables you to revarnish your car one day and drise it the next.

Johnson's Carbon Remover-will keep your motor snappy and full of "pep" by preventing the accumulation of carbon-use every 500 miles-clean and safe.

Johnson's Cleaner-will remove scum and grease and make body, hood and fenders look like new.

Johnson's Prepared Wax-for polishing bodly, hood amel lionters it prewore the varnish and protertis it from the wo.lther.

Johnson's Stop-Squeak Oil-a wonderful spring lubricant. Reduces the liability of spring breakage.

## YOU ALSO NEED

Johnson's Hastee - Patch - for tubes,


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Agents lor Chem
89-91 Rue Montauban, Shanghai.

## FORD DELIVERING PLAN.

One Man Takes Care of Two Chasses by This Systen.










 nearby distributur.



 fomear !at on ambull?




## AVIATION Vs. THE LAW <br> Airmen May Have Legal Difficulties in the Future.







 :arind, fundans-atiol. I. . I pampule


 of the shis













Inil the alf wethend is mot harren of detense, as witness the ordinary predicament that the telegraph and tele-
 a treberaph-pole on eik he vile of a man's farm and string is whe aryan walmut lii-amant. for they thas invade his dominions above the ground and give him canse for lecral ridrase su we nisy proxayl upon the basice theory that the premises stated find support in our modern recedents.

Noa. Heen what is the situation of an airlane in
 H.w tofore inviolable. It passes through the property of the i rmu: when it fan atome that portion of the earth surface which the law has always deemed his. The insintor howhte a tre-p haser. Being a trespasser, the

 it Int in ily H Hlom. in while the commonest form of I 11.15 is that which usually accompanies assault, still the flacing of one in actual fear of bodily harm, unaccompanied



Thus far we find the ariator guilty of trespass and a Lathery. I montmation of thea violent noises which intorrupt the sommolemt tranyuillity of the rustic on the


On the recent ENDURANCE RUN from Los Angeles, overetwo mountain ranges, to Yosemite Park, Cal., U. S. A.. a stock car covered the distance of 355.5 miles averaging 20 miles to the gallon and used only $1 \frac{1}{2}$ pints of oil,

Also Apperson "8" and Crow-Elkhart 4-cyl. Five-Passenger Cars in Stock.
THE FEI LUNG COMPANY Ah Kean Zung, Manager \& Sole Prop:

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hire service, 153-4 Hupeh Road. Phone C. 4133.

SHANGHAI AUTOMOBILE Co.

Our Bubbling Well Shops are fully equipped for Body Building, Painting \& Overhaulling.
ground serves to aggravate the damage. A constant repetition of this aerial turmoil day by day that constitutes ab daily succession of batteries upon the populace call be nothing more or less than a public muisunce, for ${ }^{\circ}$ so the law defines the structure of a public nuisance. And now the aviator bocomes a culprit guilty of mantaining a publi: nuisance.

What legal results will flow from plating our fliers in this status? Let us assume, as sometimes ofours, that the puilot loses control of his plane. His emgine stops, wr his: control-wires break. Jo gathes to the gromme, striking is barn, or a house, or a person. Is the liathe fo the injuct party? He is, and this answer must oltain without remold as to whether or not the fall was oeceasismed by :my fant of the flier. For, having fallen while in flae commis-ann
 maintemance of at misamee the aviator must be hedt to aseront for any damage that may ensom. I formed landin:










# MOTOR CAR INSURANCE 

REDUCED RATES
AND
SPECIAL CONDITIONS

## GENERAL

ACCIDENT, FIRE AND LIFE ASSURANCE CORPORATION, LIMITED.
lour prospatus athis to the
FAR EASTERN MANAGER,
4^ PEKING ROAD, SHANGHAI. or WHEELOCK \& Co., French Bund.

SIAMESE PRINCE A MOTOR ENTHUSIAST.



U. S. HAS A MILLION TRUCKS.

This Means Molor Trucks in Actual Operation.








 slows thit there were $95: 3,19: 3$ trucks in use at the end of









## The Central Garage Co.

Exclusive Distributors.
21 Jinliee Road. Shanghai.
"Boost for Good Roads in China"

## DENNIS VEHICLES


are made of Beffer Material-Give Better Service Cost Less per Ton Mile-and altogether achieve a higher percentage of efficiency over a given period THAT IS WHY you should wait for a good Vehicle which will be arriving shortly.

Exclusive Agents for Central China
THE CHINA GARAGE COMPANY.
2I Foochow Road.

China Might Build Memorial Roads.

(Continued from P'eyge :of)

New Orloans, there will be included an area, from Winhington down of untold fossililitios, awaiting only facilities of transportation to answer the world cry for increased production.

Thongh the Tee Highway zone is msurg assed in ancmis: and historic interest, and hence a region to attract the motor tourist, Dr. Johnson is directing his efforts rather to provid-
 and efficiency.
 and still more ships. In Amevic:










 Loe and Stonewall Jackson lic burical.

## CAR IMPORTS LEAD IN BRITAIN.

Exports Are Falling Behind Latest Figures Show.
In July, Great Britain imported 3,615 cars and 1,116





 :lll Working is stlunt on this matlem

Thwith the exponts of lititi-h falts and whas and














THE DICTOGRAPH SYSTEM
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TIRE SERVICE DEPT.

## CENTRAL GARAGE

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" Boost for Good Roads in China

## Aviation Vs. The Law
















 to the conclusion that, in the prosent state of our law, the










 aircraft over one's property could be restrained in like
 all but wild and uninhabited parts of the country. Abroad,
 shatore bat meane flyma
laty af mans. She slltathen i- not as hat as would at
 ownership in the sly to the mundane freeholder below.
 -ambuat bw deaty The sommon his in a wonderful, mutahle system, that finds its chief virtue in its elasticity. If I no cool conforms to and with the expanding spirit of
 whil havent a ly die povidm hathls of conits. 'The latter, in turn, lay great stress upon the doctrines of public policy anot puble nspediency

In it worl. When thon wheson demands as it does in
 of thoo fools - : flemmest thes the owner-lip of the air

 Thi: : tre thescaus ly itatutory regulation to control and regulate tho agorman of anmul vehicles, the laying-out of air-lanea, and the determination of proper rules of the air, the science


## WHAT WOULD YOU CALL IT？



A freak antomotice vehiche built by＂San Francisco man for lis small danghter at a rost of（i．\＄1ì

## TAKE CARE OF YOUR SPARES．

Tires Should Be Well Protected Until Placed in Use．
Automobile tires are wrapped in paper by the manu－ facturer because tire makers know that sumlight and ais sap the strength of rubber．If whould be protected until it actually goes on the rim for road sorvice．

Statistics prove that a tire good for an average of 6,000 miles when it leaves the factory will lose approximately． 2,000 miles of life by being carried，unprotected，as a spare for one year．

A tire cover made of rubberized couted fabric will outlast many tires．It will cost less than the 2，000 lost mileage on one uniprotected spare．

Neatly covered tires look better hanging on the back of the machine than do bare tires．The covers are water－ proof and can bo wased without ingury as often ass the car is washed．They come in colors to mateh the booly fimish．

## CORRECTING AND AVOIDING RIM SQUEAKS．

1．When placing rims upon the wherels，stat all the holts evenly；then gradually tighten altemate boltes mon ogposite sides of the wheel，giving each at lew forns so that when the rim lugs are light thes will all be wedgend in ：an agual distance．
 whoels and callses loonse spokits，bent rim balls amb wown： wheels．

3．Tighten the mats on thas inside of the whed ：ammed
 of use．
 atererding to information mombad on wides af tira．i．

 provided at oncer．

## WINDSOR GLASSES

The Vogue in Eyewear
Let us show how
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Head Office：－P352 Nanking Road，Shanghai． Telephone C． 3895.
司 公 鏡 眼 益 精 國 中


## SEE PAGE 104

Buyers＇Reference Guide．

## Yangtsze Hotel, Nanking



First-class Foreign Hotel
-ill
Lathameluat Tan
 slatem.
Privale Car
ur insead hola
Mrs. J. FARRLL,
Toul - xoer

## INSURANCE

Fire, Marine, Life,
Accident and Sickness.
Fidelity Guarantee
(1)

## MOTOR CARS

## Commercial Union

Assurance Company, Ltd.
Total funds exceed £41,000,000. (hina Branch: Ollice:

INIGN I3IILI)IN(:
4. The Bund. Shanghai.

Agencies in all Treaty Ports.

## FIRST CLASS HIRE SERVICE PHONE N. 940

May Wah Garage Company
Complete line of
Accessories. Tires, Oils and Greases. Repairs and Overhauling North Szechuen Road, Cor. Tiendong Road, Shanghai.

## THE COST OF WOBBLING WHEELS.

Tire Trouble and Neediess Expenses are the Results.










 alinemem is a ith : ..miti. If.. whate at. mate on









 1. . Ctremely difficult to convince the car-owner that the


Cromatir 10 a bument tho ret-in 11 liy a cide-swiping



 us that this is roper beowus the effer of the razor, when





 the wanus.

Whime of simet is ans if atherment the fatt call be very
 The tread will weur off that as though stripped off with a

 Chano IImenerer, it is obviously quite important that such


 throughout the world whose wheels are out of true and who- owntin am noss me of the flet. There ment are cotainly the broting the -atroe the! should from their tires.


As probably every one knows, the from whents of an automotite "toe-in." 'This is done leceanse undier the: driving fore the fromt whols heave a tendency to pread; hence, the "toe-in" was devised to offset this tendency. Usmally the "toe-in" allowame is from Hoser-sivternlts tw one-guarter of an inch for cach wheel.

If it be found that the front wheels toe outward, it is evident that something is wrong. If no aceident has oecoured, it may he that the comoceding rod to the sterving knuckle is too short. This defect can easily be romedied by lengthening the rox matil the fant is ambertes. It in wise to check up the alinement of the wheels from time to time. In doing this it is neecssamy to get the exted measurement between the word felloes, lowding the: me:suming stick inside the wheel and direerly in front of tha :al Then take the moasurement back of tho axlo. The dif-

 He : pace befwey the whent: is:






 Wheol rolls over the ground, and with cach laist of llo wher
a part of the tread surface of the tire is scrufted oif. Wheels the wobble, are found mostly on small cars, although this


 in nemmal $11 .: 8$.













## HAVE YOU A FIRE EXTINGUISHER ON YOUR CAR?







THE BIRTHPLACE OF THE LATE ANDREW CARNEGIE, DUMFERLMINE.

17.




## U. S. MAKERS SCORE RECORD.

World Demand Evident in Rapid Motor Development.











 swar





























 Dow de: 1 number experted to all prarts of the world in the






 - I








## HI SIBLEY IS IN THE ORIENT.

## American Motor Correspondent Finds the Climate Damp.

Hi Sibley, who was on the European war front for several American automobile jounals, and who is now in the Far East writos from Tokio, Japan to his Anerican connections. "Not the loast of our compensations for living so far from home is 8 per cont beor-a somewhat higher average than at Levy's."

Levy's, which was a favorite refreshment and jazz entertainment refuge for the wowry, native and visiting Los Angeles, is no more. The woak "average" caused it.

## CARS ALMOST DOUBLED IN CALIFORNIA.

Automobile registrations in California for the first half of 1920 totalled 476,938 , which just about equals the number registered for the entire year of 1919 or 477,450 . Receipts from registrations for the first six months of this year were $\$ 5,002,793$, which compares with $\$ 3,904,719$ for the same period in 1919. Includod in the 1920 registrations are: privately owned passenger cars, 433,707; trucks, 30,115 ; passenger cars and trucks exempt from license fees, 10,050 ; automobile dealers, 3,066 ; chaffeurs, 46,429 motor cycles, 17,051 .
months of 1919 ; to Peru, 860 machines against 485 in the same months of the preceding year; to the Philppines 2,073 against 1,601 , and to Buitish South Africa, i, 110 against 1,161 in the same montlis of the ficceling your, practically all the countries above named being, with the exception of Argentina, distinctly tropical, and illustrating the growing demand of the tropics for the horseless wehirle. Mexico, despite the unsettled contitions, took in Hw 11 months of $1920,2,489$ machines aganst $1,9.51$ in the same
 machines, against 1,887 in the same montho of the ore preceding.
 comesponding demand for expipment to actompan? 1 wom. The value of antomolites fires cxponted in fle 11 montlis



 11 months of the fiscal year 1920, against 24,196 , valued at
 $\$ 36,000,000$ worth of tiren exported in the 11 monthe condine:


 Americat as is whole.


WILKIHSON,HEYWOOD, CLARM Limind

1. C is $0 \rightarrow \mathrm{~N}$

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Lacmat - if to from one of the principal petrol im-




 moderatied that peetrol purchased f.o.b. at U.S.S. ports can-
 this must he added fid. for the British duty and $8 \frac{1}{2} d$. for dis-












 in - |e- . at the imperter's profit.









 colman noin ...nt, while it watched all the available crudo




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for N.B.A. benzole to 3s. 11d. per gillom hetai) hats ban decided upon.

Following on the moetings in Edinburgh and (ilasenw the Royal Scottish Automobile Club and the Automobile Association held a mecting on lugu-1 2lth at forfur in connection with the moter the question

Captain Spens, O.B.E., Scottich Secretary of the Automobile Association, referred to the production of benzole and power alcohol within the Empire. He considored that the Government, instead of spending $£ 40,000,000$ on policing Persia and Mesopotamia, should devote $£ 10,000,000$ to the


A resolution was adopted calling on H1. (ienesmment in the national interests to carry out immediately the re-
 undertakings should be mged to strip completely the benozle
 presont hampering the manufacture of commareial atoolal for motor fucl stowld be romesed

## PARIS AVIATION CALLED SHOW ON



 or Junuary, 1922.

## ESSEX CAPS NEW RECORD.

Four Cars Break U. S. Transcontinental Read Record,

























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USING A JACK AS A WHEEL PULLER.

American Motorists Finds New Use for Equipment in Emergency




( 4 Bi.


The de aription of the lometian meteriat who came リran this nomi the. fullow-:

Whind the rge aromat the -pokes as slywn and then



 - in. insle designs do not lend themselves to this method of phen momal mbe.. there is a hiok gr some oljeet het ween the jack base and the axle.

## NEW ZEALAND RAPIDLY BECOMING MOTORIZED.






 ()wing to the fact that every district has its port and at h.on chow fourths of the population are located less than 5i) miles from the seahoard, the motor truck is the ideal velicte for all exported produce.

## HONOLULU HAS 5,000 CARS.


 In sircil owhoding to an estimate recentlar published from


PARK IT ON YOUR FRONT VERANDAH.


A California movie star adds humor to pleasure with this little speedster. It is six feet long and can be lifted by one man. The owner recently parked it in the doorway of a barber shop while he was being shaved.

## TRADE SLOW IN ENGLAND.

## Small Cars Are in the Largest Demand,

S. A. Miles, general manager of automobile shows for the American National Automobile Chamber of Commerce, has returned from a four months' trip to Europe, according to a recent New York report. He made the trip for recreation, but naturally looked into the status of the industry in England and France, which were the only countries he visited.

Miles toured 4,000 miles in his own car over England, sind was impressed with the fact that the country is recovering from the effects of the war. The automobile industry there is not progressing as rapidly as it was loped it would, however. This is due largely to industrial conditions which closely parallel those in the United States. The recovery of France has not been so maked. Miles does not believe there will be much of a market there for some time to come for the more expensive American cars. This is partly due to the almost prohibitive duty.

Dealers in American cars in Eingland have no complaint, Miles said, concerning their weatment in connection with the Jondon show. They are placed on exactly the same basis as their British cousins.

## HIGH RENT STOPS CLEVELAND SHOW.

Areording to the pasent outbok, there will bo mo: $110-$ tomothile show in (leveland, Ohios, Hhis: being the firat heats
 difficully is in securing ib lmidimes. For the only bmiding: available, the awner demamels at rent of Sill, (6) fin : Weok




 bo taken at a later mecting.


THE SUPREME
SUNBEAM
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The set purpose of the makers has always been to place

## QUALITY FIRST

and to that end the whole of the processes of car manufacture at Moorfield Works are subordinated. The result is seen in the eminent standing reached by all Sunbeam productions.

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## LATEST ADDITION TO SHANGHAI'S GARAGE FAMILY.




MILTON WINS AT TACOMA.<br>U. S. Speed King Adds New Interest by Marriage.














 howl. Thare wewe m. an . Inons.

 Sarles, $\$ 1.200$, Thetuy Sheply, $\$ 1.100$ and Cianou Cherrulet, $\$ 1,000$.

One inter-ting event of the race concersed Ralph De Thath, Edtlie Wilter and Lidde ODonnell. De Palma's ballot rar bowk a conne tine ront in a speed trial and could not to entencul. In Palmas wis a great favorite with the crowd and Miller offered to retire and allow De Palma to dive if is Dumewherf. Which atoo had heen damaged but had been repaired. O'Donnell, having a faster car than diflat to afiomet the give his (ar to I) lalma and drive Niller's car. Do Palma agreed, though be had never twane dhan any wat hot int own in at race and Miller Went as O'Donnell's mechanic. But the famous De Palma "jinx" had accompanied Ralph to the Coast. He stopped as somb bums with medramal trombes and in the 75 th 1.) went out for good with a broken universal joint. Whamell fimale inghth and lati.
('lifi Durunt - $\$ 17,000$ Chevrolet mount was the first to go out of the race. A broken connecting rod fractured the crankcase in the third lap. His car was known to be slow, but be agreed to start and do his best.


## LEFT HAND TIRES WEAR OUT FIRST.

!) ue to the pitch of the road, which throws more of the weight of the car on the left side than on the right, tires on the left hand side of the car wear out faster in proportion than those on the right hand side.

Norway has no less than 8 , 000 motor vehicles.

After making is good fight in third and fourth positions, Joe Thomas, of Scattle, with a Monroe, was climinated in the 78th lap with a broken piston. The fourth driver to go out wats Joe Boyer, driving a Prontonad, stopping in the 97th lap with a broken piston.

Milton increased greatly his mumber of points for the national $\Lambda . \Lambda . \Lambda$. racinge championship, by his 'Taroma victor?

J'ires did much to decide tho wimmers. Milton set from the stast what was to be the wimbing gisee, but Ihulfort kept close to him, and the fiffol lap found Mmplyy leadines Milton second, and Mhilforl, De Palmas, (iaston (hewouled. Beyer and Sarles following in order mamed. Milton dew ahead after the 100 h layr, but, Mulford still ereamanalls threatened him until hiss stop for tises at the sisth lap
'Tommy Miltom and Miss bilinor (iiantralley, of sit. Daul, Minn., were married at Unity ('hurch in that dit? June 29. 'Among tho ushers was Barney, Oldfiedd.

## MULFORD JOINS PAIGE.

Race Driver Has Been Long in Motor Game,
Ralph Mulford, lamoms mace driver, has joined the Paize organization as a demonstrator. He made his debut with


 pany was building motor boats. Without mechanical training he developed an ability to hendle and mpair comene dhat


 $1!911$

## IOWA HAS 356,685 CARS








 into the state highway fund.

NEW "WRINKLES" IN AUTOMOTFVE ACCESSORIES.














 GMEL. $2.2-y$.






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## BRITISH MAKER RECALLS NEW MODEL.

Taxes Kill Radial Engine Light Car Production,
That "the best laid schemess. . gang aft agley," especially in connection with the making of motor cars, is evidence by an announcement from Messers. Enfield- Aldaty Motcrs, Ltd., who announce that (ircumstances have not permitted them to commence production of the radial engine light car which was announced some nine months ago, and that they therefore consider it desirable to return the deposits that wrre placed with them by people who made orders for this model. While doing this they express their willingness, should they find it possible later on to proceed with the manufacture of the car, to reinstato orders wherever this is desired without loss of priority. The reasons given for the firm's inability to proceed are, the great increase in labor and material costs, which would not allow of the car being manufactured at less than £550, and the new taxation scheme, which would hit this model very badly, as, although the c.c. is under 1,500 , the tax would be $£ 15$ per annum, owing to cylinder bore only being taken into account in the Treasury rating. The increased E.P.D. and the new Corporation Tax have also been elements on the financial side which have told against developments.

## MAIL CONTRACTS TO LAWSON PLANES.

## All-Metal Crafts Will Combine Passenger Service on Three Routes

The Lawson Airline C'o. of ('hicage las been awament
 a vear by the IT. S. Jost-oflice Depantment. The contrats call for a service from l'ittshomh to St. Iouss loy way of Columbus, ('incinnati and Indianapolis at a (onsi of $\$ 147,000$; between New lork and (hicago via Hamsiams.
 York and Athanta via Washington, Roleigh and ('olumbia for \$3:300,000

In conjunction with the alwand of mail con:lacta tha Jawson company has amomed that it will cary jearneme
 will start in November. Jir limes arr lang buile will
 bodies. Sixteon passengers ceth be acemmmodatal in ath







 canrying contatats.


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 Is lawi it contuol from the lamale-har and the other pair Iy a pubal monvomemts atmated near the driver's heed.

Teefore leaving the "chassis" the wheels themselves fire wowle of Al- - iftion, since they are formet of two
 deviee and olamen treether at their edfe by small


 is emally detcicter from the machine, and then is as ensily than agen in onler that the tire mar he remmed. A staml
 anht is ambuntic in ar tion, since a leaf spring heurs on a -mon innmed on the pin the of the - tam? The tank accom-
 supplise wit to the oflinder and crank cane of the encine.

Vat only $1-$ the rider prowted from mud and water



the the engine is completely bexed in also, so that the rider's - hathes ate in the demen of thoming sorled with oil.

The seat is fimmed of a steel pressing, suitably padded,

## U．S．AIR CLUBS MERGE．

## American Flying Club Taken Over by Aero Club．

The Aero Club of America and the American Flying Club have voted formally to amalgamate under the name of the Aero Club of America．The clubs will occupy the quarters of the American Flying（lab）at 11 Fast Thirty－ eighth Street．The combined membership of the organiza－ tions is 1800 ．Opposition to the merger was voiced at the meeting of the Aero Club by Charles J．Glidden and Lient． Rafe Emerson，said to have represented Henry Woodhouse， suspended inember of the board of governors．The op－ position was in a small minority，however．

## HEED THESE NOTES AND AVOID TROUBLE．

When the road is greasy and narrow and you must pass another car at speed，check some distance away．＾ skid as you pass the other fellow may interest the heirs of both．
\＆safety mirror on every road vehicle，pleas：
Jo not run up to the back of cars and then jamb on your brakes violently．The man who makes a grod average keppr his car going all the time．He does not have to go down a speed owing to violent braking．

Hon＇t try to show off＇．＇The man who drive＇s within a foot of danger may also be within a fort of the gravi．In this case a mile is better than a miss．

At a cross－road do not regard the bowing of your hom as the valole duty of man－or woman．If you blow and carry on the other man may do the same．The police will interview the survivor．

Having taken a decision，stick to it．The man who hesitates js lost．Remember that the other driver may be watching your morements and depending יyon them．

Thie world＇s greatest scenic automobile highway which the linited states（fovermment som is to start hewing across the big range in（ilacier National I＇ark，will emable：fomaists to make a trip of for miles over the roof of the liockies，riving to an altitude of 9,000 feet．
surported on a pillar，which forms a portion of tho reme of the frame．Over the rear mudgnard or shield a ecmpart－ ment is formert which accommoditess a dry battery for sipplying current to the electric：lamps，at pump and at twol kit，and atsos leaves sufficiont room for cars ing ：mumbor of ematl parcels．＇This compatment is closed les the se 11 ， which can the swang forwat out of the wall when ate ess to the comp：stment is reguired．Suitable aperturess are bett in the front portion of the＂brody＂to allow for comblims， and we are informed that no damere from encthentim： need be feared．

## DEALERS：

WRITE US FOR PRICES ON INDIAN MOTORCYCLES，YALE，INDIAN， SNELL，EXCELSIOR AND IVER－ JOHNSON BICYCLES．WE ARE JOBBERS，DISTRIBUTORS AND WHOLESALERS OF MOTORCYCLE AND BICYCLE PARTS AND ACCESSORIES OF EVERY DES－ CRIPTION．WE CAN SAVE YOU MONEY．WRITE US FOR CATA－ LOGUE．STATE WHAT YOU ARE PARTICULARLY INTERESTED IN．

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品發加交訶司货問作脚三輪踏㞗平肬公動省函贌步均品及踏輪附車需多踏司機太至請業篇以附沉脚作發用件疌此需平美以如本上尿車踏孩動品並胜


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 Mblantiaif 4tal：

> U. S. CYCLE SHOW IN NOVEMBER.

 Tratio of Imerica．

## MOTOR CYCLE PRICES ARE RAISED.

## Henderson and Excelsior Find lt Necessary Because of Production Costs.

Excelsior and Henderson dealers throughout the United States and in foreign lands were notified of an increase of prices on those machines, beginning Sept. 1. The advance is only a small one on the previous list price, and has been necessitated, as in the case of other manufacturers, by the increased prices of raw materials and equipment. Production will be pressed at the factory night and day, according to reports, in onder to emable doalers who have not received their full quota of machines to take advantage of the fall trade. At the present time the output of machines is proceeding at the highest speed of the season.

The new Excelsior and Henderson prices in gold f. o. b. factory as follows:

Excelsior, regular model, \$435.
Excelsior, Splitdorf, electrically equipped, \$485.
Henderson, regular model, \$535.
Henderson, electrically equirped, \$585.
Reverse gear on Henderson only (extra), $\$ 1$ 万̌.
Excelsior side car \$150.

## MOTOR CYCLES POPULAR IN NORWAY.

Large Road Mileage Building Makes Future Roseate.
The numbers of motor cycles and combinations registered in Norway on December 31 last, as recently announced, were as follows :-

Motor cycle

|  | Motor cycles. | Combination |
| ---: | ---: | :---: |
| Christiania .......... | 418 | 166 |
| Remaining towns ... | 684 | 189 |
| Country districts | ... | 1,049 |
| Total $\ldots$ | 2,151 | 197 |

Some jdea of the progress the movement is making in Norway may be gathered from the fact that the total number of both classes of machines registered in the country early in 1905 was only 430. Waving regate to the lages mikage of new roads at present under construction in Xorway, the market is one which should be worthy of sp exial altention hy cyele and motor cyele manufactures.

## BACK-FIRING HAS SEVERAL CAUSES.

Bakk-fising through the carturetor is sempally camsad by tox lean it mixture, which hems so stowly that it is still burning when the inled valve oprens. 'Then it emters Hus intake manifold, fires the mistume there and this lamh fir :s through tho carburetor. Or, hatek-firimg maty be canted ley f(x) great spark advance. Again, the inket value mats allow
 through the carthemer.

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## ONE " ROLLS" A DAY IN U. S.

The Rolls-Royce Co. factory at Springfield, Mass., which cost about $\$ 800,000$, will be known as the Rolls-Royce Co. of America. The present plans call for an output of one car a day, and by the addition of more machinery, 1,000 cars a year can be turned out without additional building. Forty of the best experts were brought over from the Derby works to supervise the work in the new plant. The Springfield plant will turn out the same chassis, in every detail, as that made at Derby. It will sell at $\$ 11,000$, and the body ordinarily used costs about $\$ 7,000$.

INCREASED CAPITAL FOR DUNLOP
Reports" have reached New York that the Dunlop Rubber Co. of England has declared a 10 percent stock dividend and has increased its capital from $4,500,000$ pounds sterling to $15,000,000$ pounds sterling.

ENGLAND BUYING GERMAN MOTORS
Since the Armistice, i.e., from November 11, 1918, to May 31 last, 2,867 cars and industrial motor vehicles of the official value of $£ 674,794$, were imported from Germany into England. These figures appear in a list of imports from the Fatherland covering the period mamed, and it does not appear, but may safely be presumed to be so, that this large mass and value represents mainly-probably almost en-tirely-war vehicles bought by speculators.

FORI) FIRST IN S.lO P:ItLo
[n Sao Paulo there are 1,646 private cars and a total number of 2,595 motor vehicles, representing 171 different makes, of which the Ford was first.

## AIR POST TO PVRIS CHE:MPIER

 NowThe Pritisis Postmatem (imemal haln reduced the special fow chamed, in atditions
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Mercer.
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Overland.
Packard,
Paige.
Premier,
Renault,
Rolland-Pilain
Rover,
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C. 402

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W. 465

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C. 1518

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Grand Garage Francais.
Gt. Northern Garage Co. Honigsberg \& Co. Inc. Honigsberg Service Station W. 1135 Hudford Garage
May Wah Garage Co. W. 1135
C. $\quad 322$

May Wah Garage Co. N. 940 . ............N. 2938 Pow Hang Motor Co. Hankow 1030 Shanghai Automobile Co....... W. 933 Shanghai Horse Bazaar...... W. 1641 Shanghai Motors Corp. ....... W. 2004. Star Garage ................................. W. 197

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C. G. C. Truck Service

Central Garage Co.

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Alliance Assurance Co., Ltd.
Assurance Franco-Asiatique
Commercial Union Assurance Co.
Excess Ins. Co., Ltd. ................tlit (......
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Jardine. Matheson \& Co., Ltd. ............
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OILS AND LUBRICANTS
Koster Company
3rd Civ...
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 overheating of the ongine, boiling and evaporation of
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# MOTOR 

A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT



## CHALMERS <br> WITH HOT SPOT AND RAM'S HORN



## SPECIFICATIONS

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SHANGHAI
2a JINKEE ROAD

## That Familiar Pounding or Engine Knock

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LISTEN to cars in traffic along Nanking Road or on the Garden Bridge inclineoften it is knock, knock, knock. Cylinders miss because spark plugs are fouled. Carbonized valves cause loss of power.

Carbon is the primary troublemaker and you hear of engines which carbonize so rapidly that they have to have the carbon removed every five hundred miles. Yet many cars are able to run
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Improper lubrication is the greatest cause of excess carbon deposits. Ordinary oil breaks down under the terrific heat of the engine- $200^{\circ}$ to $1000^{\circ} \mathrm{F}$. Large quantities of black sediment are formed which have no lubricating value. Thus carbon rapidly forms. Bearings may burn out, knocks are incessant, power is feeble.

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##  <br> MOTORING <br> AVIATION


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# THE <br> ORLENTAL MOTOR 

A Monthly Magazine devoted to Motor Inferests in China and the Far East Generally.

Vol. II. SHANGHAI, NOVEMBER, 1920. No. 8.

## SHANGHAI SOLVING ITS PARKING PROBLEM.

Widening of The Bund to Do Much to Relieve Present Congestion.

Parking space in front of the Shanghai Club.

P
 (reases in motor car populations mo mather what country the city affoctod is locatod in and Shmerhai has beron and is suffering for the gern pains of hew an



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White these imporemente have done much tor relieve the farking problem in certain seretions of the city, ther still cxist exsewhere and it is prolahhe hlat the traffice depatment of the Mamicigal paliee with the boand of Putati Wonks will comtimue the weak dat Jas bean stalted be porviding additional farking amer.

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In this 1 armet itw is interesting to mote the plan of Faftenarding and pasking motor cars which has le col wonked

 the farking area at the latere sex.ial and puther (womto and












 City's boast of not a car, tool or wrap stolen during the
 'glaty flarof of that.
























## BUGATTI WINS FRENCH EVENT



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 mevblime







 who eventually proved to be the winter, and by Violet in a Majola eyclecar of 6 i cu . in. piston displacement. This
 Bhe dume comta. and had won that event. Its high speed

 a $t$ win cellinder two-stroke engine, with crankcase com-









leather. A temporary repair was made, but this did not hold and the machine was withdrawn early. The Bignan Sport team lost De Courcelles at quarter distance by reawn of magneto failure. Of the Majola four, (artean went out with valve trouble, Leduc broke a connecting rod, and Muraour retirod with a hole in the crankcase.

England was represented in the race by three Silver Hawk light cars, one of which was driven by Reno Thomas. These cars were afflicted with a thermosyphon cooling system which proved insufficient under constant hard running. Fickering, one of the drivers, poured cold water into a hot engine and crack the water jacket. Thomas stopped at half distance for water, but a crack having developed in the water inlet pipe soon after this, he was obliged to stop for every one of the last ten laps in order to take on water. He finished the race, but in comparatively slow time.

At half distance the race looked like a complete victory for Bugatti, for these cars were first, second and third, the leader having an advance of seven minutes on the fourth man, Nougue, on a Bignan-Sport. There were twelve machines in the race at this time, but soon afterwards the Englishman Marchal!, on a French Mathis, had to withdraw owing to a broken magneto drive, and Violet after making a fine diaplay went out with broken chain and leaking radiator.

Four lapes from the end, when Friduch was in the
lead, with Viscaya second and the third place very keenly fouglit for by two Bignan-Sport cars, No, 1 Bugatti came in for oil. Juat ats the car Wa二 moving offil Mr. Bugatti apipearel to detere ame -ign of werheating, for he shouted t:) Viscaya tos : (op), ran aftor the (ar and began to unscrew the radiatio fifler cap). Without a moment': heritation the jumy diespalified the car and gave eiders that it should not be timed. This decision was strongly disapproved by the "pectator:, "hos hat greatly atmined the way in which the Bugatti had bee n hamded in he race. I buring this incident Baccoli, of the lingatti tean, came in for a change of plugs. In the excitement and disorganization the work was not done very quickly and the engine could not be started owing to a flooded carburetor. This delay gave the opporthnity to Nomgn" and De limnay, en Bignan-iport cars, to got intis recend and third paces, and aloo allowed Rose of the Majola team to pick up fourth prize, Braccoli only coming in lifth. (ictge on Silver Hatwk, and liene Thomas on the same make of machine, followed in sixth and seventh positions. An English G. N. retired a short time before the end animg to the awal having invaded the courae.

The winning ihgatii call wat built in 1914 at Molsheim, Alsace, then German territory, but on war appearing imminent this and ofter cats wase run into ltaly in werder to vate them from (ictana regu-itions. Bitore bugatti, the


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## NANTUNGCHOW BEING MOTORIZED

## M. Jel Industrial City of Central China Gees in For Buses



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 ed, a distance of five miles.







 . wit built, will be constructed by the China Garage Com. paty on Garord and Dubnte chatsis with slightly larger
capacity. This line, with that of Foochow to the south of Shanghai, are the only two public service motor lines in oparation in Clina-but they augur well for a great extension of such services.

It would not be just in mentioning Nantungehow as the model city of China not to give details of the developwents which lave made it thus. Here are a few of the things that have brought alfout the recognition of the city as such: a cotton and sericulture experimentation school and stgation; 334 schools, with 21,382 student: ; no bogers or proverty of any kind-an alnocst Utorian eondition in China; an agricultural college with 126 s:tudents who do all the expremental work themsclves; a modem theater giving Chinese versions of modern plays; two modern cotton mills with 60,000 spindles, 500 looms and 4,000 employees ; a modern! cotton seed oil mill ; one match factory ; one flow mill ; one silk


Liond leading lo the Model C'ity from the river port
filaturn; one iron foundry; (ine electric light plant; is direct steamer lino to Shanghai and other ports; a district that produces aproximately $1,000,000$ bales of the finest eretton in (hima; proposals for the future that include lmudreds of miles of good roads, eeven new cotton mills, is new olectric light and power plant, at enal mine and oxten-




lank whicth has a Shangai bounch occopring the Nantung himiting crected to louse the offires of the city's industries at that port ; an infirmary and school for blind children; a lace and embroidery store on Fifth Arenue, Now York.

('sedit. for the dwolonment on Ximtungemo and its
 Chat, both ol' whan hata of at mene ve:us in hringing the city and country up to its present standard of excellence. Chang Chion is a famer Ministor of Igrimbure ant Commores of' (hima and his ambervess to hine the mation up

 educated in the United States, is gradually taking orer the work of his father, who is serowing odd, and carming fert wat the modernization mosement with the aded of other ('himese voung mon of the diatri.t who hand hem admeated in America. The development of Nantungchow has been puroly Chinese with no forcign aid or assistance. Chang (his.a, fhang 'lat and (hatne (hiow, Jr, are the indme-







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# AMERICAN MOTOR PRICES REDUCED 

Falling Exchange Prevents Oriental Market From Participating.

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## AMONG THE VETERAN'S OF AUTOMOTIVE YESTERDAYS.

Right.-A motor tricyle of fifteen years ago, and still in service, with the whole family alo ord

Left.-A ispassenger, tiller stererilly horizontal rugimed Belsize - lerele times hace "hangrel

official business, with the result that tie rise had to be climbed on bottom gear. But what was lost in speed was gained in roar.

Visitcrs from acrose the water sixy it must be nave racking to drive through the streets of the French capital. But after all it is unly a question of habit. A score of cyclists running round a track at twenty miles an hour can give a wonderful impression of speed, and create not a fow tinills. But the same number of ars traveling at thre times the speed do not appen, afor a few minut s,
 raised from 60 to 100 miles the impression is not greatly modified for oither the driver; or the specintors.

The Avente des (hamus: Jlysers, now that it has fa
 motere :verno in the world. Jame n hats nothimg which (an exutly eompate with it ; Pieratilly is spatel br its




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 patriotic: idoas.

Here is a Dut h spaker with it Spanish registrition plate at the rem. Leritently it belongs to a purty of lung distunce tomist:, for it is equipl. d for more than rumalwht Work. It: two spare whe ls are monned on false hubs at the end of a tramsterse bar forming a pirt of the luggage camtor. They ate thas immediately behind the driving Wheels, and raied from the ground about six in. hes. The (ffe t is Lecenliar hat not di-plealsing.

I ves handisume Vimuthall is in the hatud of a gronip of Patugllese if the wegistation plat. in any indi"mion.



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# The Oriental Motor 

Morosing Motor C valing Aviation<br> <br>Founded April, 1919.<br><br>Londun Represembane © Cokayne Noyler 30 Semban:man St

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Registered at the Chinese Post Office ds a Newspaper.

Vol 11


## EDITORIAL.

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## ASIA IS LEARNING.

Gradually but surely the motor makers and publications of the Western world are being brought to see the enormisus possibilities which the continent of Asia will offer not many years distant when an increased standard of living, better roads, and more favorable conditions are made possible by the steady advancement now progressing. The "Automobile Toqics," an American motor journal, in fassing, under the heading as above, makes the following comment on this continent "way out here" :

Asiatics are gradually being won over to European ways, which means the gradual upbuilding of the Asiatic markets for European products. Col. Sellers' dream of dropping eye-water in the two eyes of every Hindoo may never be realized, but a measure of realization along the lines so whimsically set forth by Mark Twain will surely come in its own good time. The process will be tediously attenuated, however, unless the utmost industry is practised in educating the remoter races to the actual benefits offered by the products of the Occident. More especially is this true of the essentially "foreign" idea of rapid transportation, superposed on which will come the requirement for motor cars by the million.

## NOW A GOOD ROADS SLOGAN.

Apropos of the growing movement for good roads and a national highway system for China, the suggestion has been made that a slogan be adopted by both the foreign and Chinese in the antomotive trades to be displayed in all of their advertising. This means of adding impetus has been used to a great advantage in the United States and elsewhere and should prove equally as successfa] in China.

The "Ship by Truck" movement in the United States grew over night into one of the greatest transportation and traffic features in the comntry by means of the advertising of corporations and others in the motor trade. A similar slogan might do the same for China's roads if scattered broadcast in both Finglish and (hinese.

It is uy to the motor car deales's to put every omere of energy possible into this movement for national and provincial highways. From a purely selfish and commereial standpoint every mile of motor road built means a mew customer for a pasemger car or a truck. Evory mile means a greater and more powerful industrial nation and thu increase in the purchasing power of the natives of the disbrict affected. Because of this, the mexement for grand madeds should interest every foreign and (bimen firm men matter what their business may be.

For the megnose of adopting a shomath which m:l? bor of use in atvertisimg a hetter highnay- flam. 'TIHE:
 and asks that all of ite readers howd their :tssbatallee in

 roads:" "(iood roads for China": "linild (lhima mostern
by gcod roads" ; "China must have good roade" ; "Good roads assure China's future" ; "Help China to build good roads."

A local company has already taken up the movement and is displaring a slogan in all of their advertising. The Rotary Club of Shanghai is also joining the movement for better highways in the nation through a committee headed by Hon. C. T. Wang.

These are merely suggestions that have been offered and undoubtedly better ones can be found. Every reader of THE ORIENTAL MOTOR is asked to send in at least one slogan. There will be no prizes or premiums as the management of this publication feels that the person or persons who contribute the phrase adopted will be vitally interested in the movement and will find their recompense in knowing that this will be a contribution to the actual building of better highways.

## BCMPERS IN CHINA.

Thatfic in shanghai and clsewhere in (hina. Where the motor car has become an established fixture of everyday life, is hecoming more and more congested. This congestion is demanding the use of all preatutions prosible and among these may be listed, the bumper, as a means of protecting not only the motor car itself hut in warding off possible danger to non-motor vehicles and fersons.

The insmance companies in the l'nited states are now investigating the matter of bumpers an their finding as quoted in the following excerpt from the ". Intomobile Trade Joumat" will be of interest to owners in China
'Decallase of the growing congestion of automobite traffe in all large cities the insurance companies whe issure protective policies aganst collision damage hate been obliged to make tests of humpers to determine the ir ahility to protece the car, and these tests show hat imprewements in hamper design, constrution and mothed of attalment ate needed. In a momber of the beste the homper fated properly to proted the ex. due bether to the slipi ing of the attachmemts rearward, frather of the : Hakdments or "pmading of the front stres homs of the (ans. ()at of
 number pored sativatom?. hat the mumber and dita tar










## In the noxt issue of THE ORIENTAL MOTOR will appenr an Article on motors in the city of Tientsin.

## THE ENGINE IS IN REVERSE POSITION IN THIS FRONT WHEEL DRIVE.



FAVORABLE REACIION IN MOTORS.

Increase Production Shows Fath of Naiers in Future.

D











 mating 3.10 N in . Munust as anainst production in July.







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## USED CAR PRICES DECLINE.

## English Market Experiencing New Sensation in Motors.

liemort of Tandon and provincial sales of semond-
 ourt, indicite a thanhatile fall in price. The average drop

 Dan 1 leathe bandon in fur surethomer whe hav disfowel of many thou-ands of (iswerment veliicles of ald wits. Mo.uds thits rewalt is due tw the tiling of the scasun's
 rasath of the new gaviline prie incr ase an 1 the taxat on


 the influstrs is degom conming lack to its own and doing it if iou whests and most sensible way.
the ond truck production requert als, clewly indicate
 If. whil demond hum are now actully carrying stock ready (0) momedate dethes) it fullows then that thangertation
 It.an memet functurs.

1 werthume vourdienal, all signs point towards a Fall

 andir out of die imdusis. Will feel this faverathe reaction ite a ses clant thum-that is if the effects bave not abready 1. stin. spmacent.

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

COMPREHENSIVE

## MOTOR CAR POLICY

Covers at a moderate premium

THIRD PARTY LIABILITY WITHOUT LIMIT

And also fully indemnifies the Assured for
ACCIDENTAL DAMAGE

# UNION INSURANCE SOCIETY OF CANTON, LTD. 

(Incorporated in Hongkong)<br>Established 1835.<br>Dolicies are issued at the Society's<br>HEAD OFFICE, Queen's Buildings, Hongkong.<br>And alse at the following Brambly Otlicis in (hum<br>SHANGHAI, Union Building, No. 4; The Bund.<br>HANKOW, Union Buildings, Tungting Road.<br>TIENTSIN, No. 6 Victoria Road.

## U.S. SATURATION POINT FAR REMOVED.

Mojority of Motors Ownes by Miesle Classes Ninc Million Leff.
























 figitagn other families similarty sitmated whe do own in ! matorain sitmobliles. Tor quote Mr. Mathew:on
 thed of demand, supply, and the saturation-pome in the fied












 mive whas. and wila



















 What sombld hay ron "uh idollar gat or a further increase III 0 one of onaterials noed in ther manufacture. But leaving While the. I quantlles. it mas be intesenting to ex-





 :ompmies, estimated during the war-period, showed that



 motom-car and it: up-keep, if payments could be extended
 1. . 16: 115 .





 over sixteen million antos at between $\$ 6741$ and $\$ 700$ and half is million machines at around \$2.(Mн).

It anombt the mothenk.the that this great total, of pervent. of the pmpulation athit all be inducel, or would all he able for many reasons, to invest in or maintain a famil!


 million families in the L'nited States with incomes of $\$ 1,0 \mathrm{mH}$

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 and ervang the damy one on atctage life of six rears, the Hfors hymblatici inerkei combld the be sathrated ill :



## Greater Tire Mileage in Goodyear Cords

THERE are numerous qualities highly desirable in automobile tires-such qualities as comfort, activity, gasoline economy and secarity.

But there is one quality transcending in importance all these and their kimd.

That quality is variously called endurance, stamina, long life, vitality. It is, in a word, milecage.

Mileage the automotilist's actual return for the money he invests - this at the last incevitably determines any tive's fliciency ow incompetence, ecomomy or extravagance.

And milerage is the highest recommendation for Goolyeny Cond Tires.

Everywhere, ovar whatever conditions, (ioodyen Cords dw deliver miles pleasmon miles, sater miles, sumer miles. mane mitace

There is $a$ renson for this a definite and sompellin: wasem. It is foms in the peralime comstration of (iondyan Coms a construe ion orinimatad by Goorlyem:

 thousands of cords had in lasem datemally one upon the ather. without interwembe.





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 cand. 1homs lea.

Goodyen Cords will satisfy you with unuan comforf, economy


$$
\begin{aligned}
& \text { This would never } \\
& \text { happen to your } \\
& \text { cargo if- }
\end{aligned}
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## Ely






# KEEN FOR NEW YORK SPACE. <br> Drawing For Chicago anf Broafway Shows Marked with Eagerness. 








 of in hundred, manufacturers whoso names are honsehold





Libik deew first, ath! foked the bege pare. With 1.151 suf. It. difegly in from of the main ombace athl at the
 turk the similar space at the left of the main aisle, directly




the main and second floors are devoted to cars, and, as is usual, part of the third floor is laid out for cars too. But so great were the demands for space that Rauch and Lang,


 land for aremal :1at-. in :allu-1 the center of the Coliseum. T) d.c. Overland and Studebaker picked similar central corners, and many of the early drawers selected spaces where they have shown for several years past.

Theon wa- lew avimbly yate at Chicago than New lowh, and a mumber of mon-member: have yet to be taken for. it Wated amd lacomathle, new in Hare's Motors,



## A BRITISH SHOW FOR CEYLON.



 (1) - th January, 19:1, to give British traders scope in th: ; Illathe:

IT MAKES all the difwhat tires you ride onand all that difference is in favor of Silvertown Cords.

## Goodrich Silvertown

America's First Cokn 'IIrk






 lis myis






 (a) bielis










 no.t include radiator, fender and other damages raid by

 Ireth diee metorist and the folkatian is gut thy the frese mee
 mational settlement of Shanghai, it would be well for this


 sin!


'The Hudson Super-Six is known the world over as America:smariest and most reliable car. The New 1921 Models have just arrived.

4 Passenger Speedster

In the 1921 Hudson Models the Engineers have outdone themselves and have created even a smarter car than any model yet produced in the

Hudson Factory.


Tonurin! l, immousinc

 crlinder brother-the car that broke the 'Trans-continental record and bobler of every stock car reand from 11.100 miln.
; J'assmbegrar Plarlon!
All Models in Stock
HUDFORD GARAGE
Phone for a demonstration Cent. 322 or 5087
89-9I Rue Montauban
SHANGHAI

## MANY AIR PROJECTS IN U. S.

## Commercial Development Includes Dirigible Lines for International Commerce.



0UT OF THE ASHES of the Air Service into which the United States poured $\$ 600,000,000$ during the war, is being developel, through cooperation of American business with the aircraft bureau. commercial aviation along lines destined to make the fullest possible use of the unmeasured expanse of the airfor transportation of passengers, express, for messages, for photography and advertising.

An international comporation has been orgmized, backed by the biggest financial interests in the country, with headquarters in Washington, which is now making arrangements to have at least two passenger and express lines in operation within a year-between Chicago and St. Louis and between Jacksonville and Havana. Negotiations now piogressing indicate that the New York to Atlanta air mail route under proposals of the Post Office Department will also be operated.

But that is only the begiming. The ecope of the $1^{n \cdot 1}-$ ject js boundless and those who are fathering it are bokingr confidently toward huge aerial liners to be operated between Shanghai, San Francisco, New York and London; which will be 1,100 feet long and will carry 1,000 passengers. This trip will be made in 131 hours, instead of the 31 days that it takes now. All the comfort, luxury and ease imaginable will be at the disposal of the aerial myache and greater safety than by any existing means of transpori. The ability to make this trip will be provid withom ichi years.

The present ships to be built are caprabl: of as sutained speed of seventy miles per hour and will carry fifty passengers. Some of the routes spoken of are between fack: si-
viile and Havana and between St. Louis and Chicago, at which latter point the main air terminal of the North American Lines will undoubtedly be built. The fares for aerial travel will start on a basis of about fifteen cents per passenger mile, but this can be reduced considerably within a few years, as it can be shown on paper that a fare of as low as three and a half cents per mile is possible in the future. Today airships of 780 feet in length and of over $2,000,000$ cubic feet capacity have been built in Germany, where since 1910 ever 140,000 passengers have been carried without loss of life or injury.

It is intended that as soon as the big airships and other equirment can be constructed a net work of air-routes covering all the principal cities in America will be openedsome of the tentative runs with the expected saving in time by the air-route being: Now York to San Francisco by air 36 hour's, now five days; New York to Rio de Janeiro, by sir four days, now 30 days; San Francisco to London, by air five days, now 11 days; New York to Havana by air 20 hours, now two dars, New Lork to London by air 40 hours, now five days. Among those who have organized the North American Aerial Transportation Company are J. T. Callaway, of the aeronautical department of the Goodyear Tire and Rubber Company; H. W. Dunning, president of the Bemett Travel Jimean, Inc.; II. C. Young of Akron, Ohic, and E. P. Merey of Washington, D. C.

The plans of this corporation contemplate the use of great rigid airships (dirigible balloons), which will eventually! be built large enough to carry 1,000 passengers. The engincers are now figuring on airships to carry 200 pas-
(Continued on page 68)

## CHIEVROLET

CHEVROLET automobiles are built with a complete understanding of what is expected of the present-day motor car.

THERE are more than 200,000 Chevrolet cars in use. This, in itself, is proof that they do what is required of them.

BUT more important than all is the fact that the Chevrolet, as much as any other car, meets the present-day demand for low price, dependable, mechanical transportation.

EACH CHEVROLET model represents full value. In the matter of mechanical dependability, each model represents a high standard of excellence. This is of first importance. You want an automobile of known quality that will give you uniform service. You want the assurance that there is as much service given as the price will possibly permit.

EQUAL attention has been given to performance and appearance. First of all, you want your automobile quickly to respond to your needs at all times; and, secondly, you want to feel a certain satisfaction and pride in its appearance. This is true of any possession you have. It is a reflection of your judgment in making the purchase.

CHEVROLET OWNERS are our best salesmen !

## H. S. HONIGSBERG \& Co., Inc.

40 Bubbling Well PEKING

SHANGHAI Phone W. 1234<br>TIENTSIN

## NOTES FROM HERE AND THERE

Capt. R. L. TVard, manager of the Shanghai Motors Corp., has returned to the United States on business in connection with the firm's activities in China.

Edwin Judah of the China Motors Ltd., has returned to Shanghai after a two monthe trip to Manchuria and Tsingtao.

The North British and Mercantile Insurance Company on November 1st. became a limited corporation and the firm style will bear the word "Limited" as of that date.

Najor Thomas N. McConnell, Far Eastern factory representatire of The Ford Motor Company, is on a business trin in North China. He will visit Peking, Tientsin and Tsingtao.

Capt. J. E. Inch, general manager of China Motors, Ltd., recently returned from a two week's trip to the north of China in conmection with the projected service of the corporation in that region.
H. S. Honigsberg, maniaging director of H. S. Honigsberg and Co., Inc., has returned to Shanghai after a short risit in Japan. He was accompanied by Mrs. Honig-berg, who has been in the United States.
G. TT. Buck, who was until recently connected with the Thornycroft factory at Bassingstoke, England, joined the service department of the Star Garage, China Motors Ltd., last month.

Plans have been completed for the sales and chow roms of the Franco-Asiatic Trading Company on Bubbling Well Road, Shanghai. Completion is expected by Christmas at

HERE'S "SOME" BODY FINISH.


Adring "chocolete color by mesens of " neyro chunffenr. an American showmun hus achiesed this effect. Th trentment is black and white
which time they will display Auburn cars, Racine Horse Shoe tires and a complete line of accessories.

The first All-Ceylon Motor Show is to be held in next January. 'The Automobile Club of Ceylon and the Motur 'Traders' Association have the matter in hand, and it is intended that the exhibition shall comprise a motor cycle. section.

The shownoms of the automotive department of the Wah Chang Trading Company, which are located on Nanking Road opposite the Race Course, Shanghai, are nearing completion. A formal opening to show the first shipment. of Nash cars, for which they are the agents, will probably be held near the end of this month.

Max Freidman, well known to the Shanghai trade, has returned from a trip to the United States and has announced the formation of Friedman Brothers, a new company to deal in a complete line of motor cars, tires and accessories. Leon Freidman, who is in Shanghai, will be the other number of the firm.

The Hongkong Hotel, according to a recent report from the C'rown Colonly, is embarking in the motor car business with its own tire car service. Fcurteen new Studebakers have been pat into the running by the hotel and more are expected soon. It is said some of the garages of Hongkong are proiesting against this move but the hotel management. is standing on the ground of similar services operated in America, England and Europe.

Arrangements are being made for a suitable aerodrome in Shanghai with the view of establishing an air mail service between this city and Peking. Colonel F. V. Holt, adviser to the Aeronautical Department of the Chinese Government, and Colonel Tcheng Hung, chief of the military affairs of the department, Peking, were in Shanghai recently to perfect the plans. Jabin Hsu has been appointed as the local deputy of the Aeronautical Department.

Permission has been granted for the operation of several hundred baby motor cars in Yokohama, in spite of the protests of the some 2,000 rickshamen who claimed that this would take away their source of livelihood. The new cars, put into service about the middle of July, are reported in the "Japan Advertiser" to carry but two passengers, at a charge of 25 sen per mile. These motor cars are also operating in large numbers in Tokyo.


## Many Choose the New Chandler Coupé

THHE Chandler Coupé has quickly attained popularity．It makes instant appeal to those desiring the very best in closed car construction．
It is an unusual car，the Chandler Coupé，handsome in its design，luxuriously furnished and lustrous in finish．It seats three persons，or four when the roomy auxiliary chair is used，and seats them in perfect comfort on deep cushions．The upholstery is of silk plush，the fittings of dull silver finish．

Automatic window lifts permit just such adjustment of the windows as weather or wish may dictate．
The Chandler Coupe is mounted on the one standard Chandler chassis，famous for its mechanical excellence and its really marvelous motor．

## With An Early Order You May Choose Your Color and Upholstery SIX SPLENDID BODY TYPES <br> Seven－Passenger Touring Car <br> Four－Passenger Roadster

Four－Passenger Dispatch Car
Seven－Passenger Sedan
Four－Passenger Coupe
Limousine

## CHINA MOTORS，Ltd．

（Formerly The Shanghai Garage Co．，Ltd．）
STAR GARAGE
EASTERN GARAGE
MAN 内゙ルow Room
Star Garage， 125 Bubbling Well Road，Shanghai．

## CHINA BACKWARD IN ROADS.

## Only Nation of Far East Not Affected by Development, Says Major McConnell.

'The first impression made on the Westerner traveling in the interior of china, whether he is a tourist or ab man interested in the automotive industry, is the entire absence of roads suitable for motor traffic, according to Major T. N. McConnell, Far Eastern representative of the Ford Motor Company, who is now in China after a tour of the Orient. This impression is intensified, the Major declares, by it comparison of 'hina's lack of roads with the splendid highway systems of the Philippines, French Indo-China, and the straits settlements, and the steady though slow development of roads in Japan and Korea.


Major Thomas N. McConnell,
the Far Eastern factory repre.
sentative of the Ford Motor
Compran!
"However, it is well to remember that but a few jears ago gead roads were almost unknown in rural America," Major MIcConnell said, "and were not constructed until the united efforts of automobile owners forced the public officials to meet their needs. The automobile is responsible for goose roads in America and it will also camse suitable lighwats to be built in China: The demand for good roads is justified by the potential increase of business possibilities as well as for inter-city passenger communication.

- China is fortunate in that only one of the three conditions that confronted America fifteen years ago confronts her to-day. Fifteen years ago America was perfecting motor cars, tires and roads co-incidentally. Today both the motn :ar and the tire have been hronght to a high standard of efticiency and China has only to build roads.

The construction of roads in China presents no phrac:al difficulties as the country is level for thonsands of square miles and labor is plentiful. The Chinese people atic tar too grod business prople not to realize the tremendous results to be obtained from suitable highways. chece a hewiming is made other roads will follow. The constantly increasing number of automobile owners will
exert a correspondingly increasing demand for roads and they can and will make their voices heard until they receive a response.
"'There is a great future for light motor cars to act as feeders to the existing railway lines both for carrying passengers and for trucking freight. Cities anld villages now a week's journey or more from a railway can be brought within a few hours distance by an auto bus line. Freight and food can be transported where and when needed rapidly and at less expense than is possible even with the cheap manual labor in China today. This system of motor car passenger and freight lines as feeders to the railways has been highly developed with gratifying success in other parts of the Orient and can be done in China today-if roads are constructed for their operation.
"The Ford is especially adapted for such use and the low price that prevails has been made possible by standardization and quantity production. This has resulted in material benefit to the owner who is in'sured not only the greatest value for his money but is insured spare parts at all times at a reasonable price.
"The Ford Motor Company has assisted machinery manufacturers in the designing of special tools for repair work on: Ford cars. These tools enable the small dealer to render service of the same standard of efficiency as at the home factory. A large number of Ford representatives have purchased these tools and are standardizing Ford service all over the world. The $4,200,000$ Ford cars in use enable Ford owners to receive a maximum of service and efficciency at a minimum cost."

## DRAWINGS MADE FOR U. S. SHOWS.

## Square Foot Rates Are Coming Higher.

Drawings for spaces at the New York and Chicago automobile shows were made Oct. 7 at the headquarters of the National Automobile Chamber of Commerce in New York. Applications for space, blanks for which already had been sent out, were filed not later than noon Oct. 2.

Rules governing allotment of space have been changed little from those prevailing in former years, members of the N. A. C. C. and of the Motor and Accessory Manufacturers Association having preference. Space per square foot at the New Iork show, Grand Central Palace, Jan. 8-15, will run from $\$ 1.10$ to $\$ 1.50$, and at the Chicago show, Coliseum, Jan $29-\mathrm{Feb}$, 5, from i.5 cents to \$1.2.5.


## THIS FRONT WHEEL DRIVE TRUCK HAS HYDRAULIC BRAKES AND STEERING



 The echicle is casily munornceren in murrowe strcets. Inespite its lurye capacity. The tires are til biy i inches in front and it li,j it singles in the rear. The tructis are not as ynt in "ridespypered ase in the Enited Statess but leure beern suceessyginl where operating. Their distinctive features will undoubtedly make them popular.

S.R.O. OUT FOR BELGIAN SHOW.

## Every Available Inch of Space Sold at Brussels.

Every available inch of pace has been rented for the first Belgian post-war amtomohile show, to bee led in the Palais du Cinquentenaire, Brussels, Dec. 10 to 19. Tho show is international and devoted to the entire automotive industry. There will lo lit (:ir axhbitom, i-2 accession? stands, 18 tire manufacturers, 8 truck makers, 7 agricultural
 in the bicycle and motomele enetion.

French car mamutactmers: dminate with 31 imdividuri exhibits. Belgium sily hat !) all manfocturess in the show: Italy will be reprearbel by FFiat, Bianchi, Tatto!Fraschini, spa, and by the In-ald:) (o., which hat gust entered the automobile field. Amoric:un cars to the phaced on exhibition are Comet, Maxwell, Chalmers, Paige, Westcott, Dodge, Buick, (hewrolet. (Nerland. I'akias an : Oldsmobile. American tire firms are Fisk, Goodrich and United States. In addition, American accessory manufacturers will be well represented by Brussels dealers

The Belgian show asomue= considerable imp watace this year by reason of it being the only one to be held on the Continent of Europe.


GOODRICH CHOOSES BALTIMORE.

## Rubber Company Will Center Exports at that City.

The B. F. Goudrich Rubber Co., Akron, will mak:= Batimore, JIay land, the export port for all its foreign trade, aplroximating $\$ 20,000,000$ a year, following negotiations conductal throngh the in lustuial buresu of the Board of Thade. Propeny has ben leased for ten Gars on West Pratt Sireet which will be the site of the rubber goods exporting warehouse.

According to C. A. Tanner, Baltimore manager for the fondich company, conditions there have been found more favorable than in New York for economical and expeditious handing of metchandis. The company, he said, has hat mañy shipments delayed in. New York because of port con: e-tion.

## SOPWITH AIRPLANE FACTORY CLOSED.

The Sopwith aviation factory at Kingston, England, employing one thousand workers, has closed because of financial difficulties. Since the war the plant has produced the A.B.C. motorcycle.

# BEAUTY POWER COMFORT 

Beauty, power and comfort are masterfully combined in the Auburn Beauty-Six


Sole Agents for China

## THE FRANCO-ASIAITIC TRADING COMPANY

$$
95 \text { RUE MONTAEBAN. SHANGHAI. }
$$

Phone C. 2551

## CHINESE IN CANADA ARE TAKING UP COMMERCIAL AVIATION.



Aviation as a business is being taught by a foreign instructor to Chinese at the Keng Wah Aviation School, Saskatcon, Canada, which is fimancerl by the Chinese Nationalist Leaguc

## TIENTSIN COMES OUT FOR DIMIMERS.

## First Special Area Warns Motorists Against Glaring Headlights.

Tientsin has come out flat footed in favor of the use of dimmers-that is, in the so-called First special drea. Such a warning should be given to all motorists in ('hina for the glaring headlight has been the canse of several accidents in Shanghai and will bring similar results in other cities if not curbed. The announcement published in Tientsin follows :

The attention of Motorists is called to the following:-
The Regulations covering the lise of Motor (ars and Notor Cycles in this Area are being repeatedly violateri in two particulars ; to wit, the lise of excessively hright Head Lights, and the ignoring of Speed Timits, lath particulats being detrimental to public safety.

From the reports of the lolice covening the pist month the transgressors are generally known, the momber of their cars being on file in this Office.

Fierce Head Lights are forthiden 10 the Nouth of the Canal, and the Speed Limit of 15 miles an hour must not be exceeded anywhere within the Area.

Dae warning is given that spectial lolice Inopectors will be detailed for duty who will have the power to hold up ang car violating these Rules. Transgressors will also be liable to the penalties covering such cases.

In the interest of public safety.
By Order, - Officer in Charge,
The Special Bureau for Administrative Affairs.
Tientsin, 25th October, 1920.
1st Special Area.

## FRENCH PRODUCTS COME TO CHINA.

## Auto Palace Has New Stock of Michelin Cords and Renault Chassis.

The first Michelin cord tires for China have arrived and are now on exhibition at the Auto Palace, 362 Avenue Joffre, the Central China agents. The factory in France is now making a comilete line of all sizes of cords, the first to come to China being 880 by 120 and 820 by 120 c. m. of the clincher type. A small lot of straight sides in cords also arrived with the shipment.

For the first time since pre-war days the Auto Palace has a full stock of Michelins. Michelin dise wheels which have met with great favor and large sales in the United States are now en route.

The first Renault 12 horsepower chassis and a $1 \frac{1}{4}$ ton truck, equipped with pneumatic tires all around and twin pneumaties in the rear, have also reached Shanghai. Five more chasisis are enrout. The first shipment of Renaults was received some time ago but consisted of finished cars. Further shipments will be coming through from France regularly from now on.

## SWEDISH CAR IMPORTS.

The Swedish Board of Trade statistics relating to imports and exports during the month of June and July are genernlly satisfactory. The value of cars imported amounted to kr. $\overline{7}, 000,000$.

## LIGHT AND POWER PLANTS



Globe Light and Power Plants are well known and extensively used in all parts of the world-why?

## Because

They are very Economical and Simple to operate, require very little attention and Absolutely Reliable.
Globe Light and Power Plants are most suitalle for Schools, Churches and Homes in the Interior Cities and Towns where electric current is not available.

Globe Light and. Power Plants are Now ready for Delivery. For full particulars, Apply to


Branches and Agencies in all important Cities of China and Abroad Exclusive Agents in China for GLOBE ELECTRIC Co., MILWAUKEE, WIS., U.S.A.

## THE LITTLE THINGS ABOUT YOUR CAR.

It is the litile Hansis about fom motor car
that count just as it is the little things in you:" business
that witon cause your beat latid plans to do astmy.
 to run back into the dutch leou-ings, sen that it must be drained out exoly two or these weoks. The remedy is (h) ions: and it will he well forexmine the oil ret-iner between the cluth and trmanission, at part of the trouble may come from this.

I sativiacher empound for coather hoth the inside and outside of tires is made by stirring five pounds of Whitoning into a quast of gatoline and alter at thorough mixture has been obtained, adding a quart of rubber cement.

Drain your cheine ail crols su() to toot miles. It may seem cheaper to use the old oil now that oil is higher in cost, but repatis are more costly than oil.

It sambs ratlex amomalous that worheating is one of the troubles that often occur in very cold weather. Sometimes this is caused by the use of an inti-freeze solution having a hoiling prent below that of cleas water. More often when at cale is 1 wn with nothing but water in the radiator some part of the water system fieezes enough to folsorut the 1 hision of the water, with the rosult that boiling quickly takes place.

Most motorists have encountered the difficuity of kicel ing inside blowout patches from creeping out of position in which they have been placed. When the patches move naturatly they uncerer the bole they were intended to frotecet and so bocome weless. lie placing a diece of inner tuhe asianst the casinge, at the phae where the blow has ocoumed, the pateh will he hek fimmly in position. Inoidentally the piece of tire will eventually become vulcanized to both casing and patch, making staunch repair.

If the srings of the exhaust valves become weak from nsic or heat the pistoms will dram hunt giases iuto the cylinders, past the ralres with the meming gasoline charge, giving an improper mixtme The valre springs should be tested cicasionally to see if they are of full strength. The alreage strength of a ralve slating should be thirty pounds. At high engine speed the exhaust valves nearly always permit some lealiage.

Rear axle woises mat be hrought about by ant one of the folloming callues: Woun or hroken geaxs; worn differential or pinion bearinge ; warlca gears; matidjustment

Liach month on this page will be published little thinss about your motor car that you should knowoften, knowledge that will save you repair bills.
of the differential mat on fimion ; inacourately cut gear 1.0.th: inlualigmment of the differential unit and pinion: forcion mattor on the gear teeth ; sprung axle housing.

When something scems to rattle around the body of your machine and you don't know just what it is get some - me lo hod the doore lighi while rou dive, says " American IIfalisil." If that stop) the lattle, get some anti-rattlers for the doors and apply them.

It is very impertant after a tire has been changed that the rim shall be properly replaced. In this connection it is: mot geod dactice to tighten each lug fully before going to the next. The proper way is to tighten one lug a little, then the one oprosite a little, and so until they are all snugly in place.

If cath lug is tightened all the way the rim is likely to go che a little askew, and this makes for squeaks and general looseness, perhaps to the extent of the rim's working off.

Whon it is abisolutely necessary to 1 un on a flat tire, keep the tire on soft earth as much as possible. This Werente cutting the tube, which is inevitable if the wheel fakee over shap stones, (ar tracke, etc.

When charging teminals are not marked flus and minus, to indicate the nasitive and negative sides, the following method may be used to dotermine the polarity. Attach beth sides of the circuit to small lead plates and Flace these plates in a tumbler nearly filled with battery sclution or electrolyte. Turn on the current and after three minutes remove the plates. The one which shows brown discoloration is attached to the positive side.

It is good practice to stow away old tires and use unbroken treads during seasons when heavy rains are likely. Water through capillary attraction soaks into the fabric and cords, sometimes causing chemical action which loosens up the lajers. Then, too, rubber cuts more easily, when wet than when dry.

Nothing is much more ungleasant than changing tires in the rain, and blowouts are certain with tires having hreken trads, if they are in the a ain.


Care which might seem overscrupulous is lavished on each Templar-and constantly evidenced in its performance.

Tempplarc Tom Valve Motor.

Inbred worth and lasting luxury have won Templar ready repute as the finest small car in America. And Templar's fleet power, coupled with unusual economy of operation, has heightened this well-earned prestige.

Two-Passenger Roxdsters and Five-Passenger Touring Cars in Stock

## THE CENTRAL GARAGE COMPANY

Exclusive Agents for Central China

2a Jinkee Road.

## CHINA MOTORS, LTD., ORGANIZED.

New Name of Former Shanghai Garage Co., Ltd., Is Officially Sanctioned.




('rpt. J. E: Inch Managing Director.

THIS (iENERATLON now might well be called the generation of the motor car, for even in the minds of the younger men of the West there still stands a vivid impression of their first sight of a motor car. Even later than this, the first motor cal came to China and when it came doubts were expressed as to the future of any such rehicle in the nation. To-day the rapid derelopment of motor organizations indicates strongly that the distribution of motor cars in China will one day be equal to that of the mations of the Occident. One of the most neteworthy exmples of this progress in mator distribution is the ('hina Motors, Iimited, the outgrowth of the reorganization of the Shanghai Garage Company.

While the internal organizatien of the Comoration has not been changed materially to cope with the increasing business, the name of the ('hima Motors, Litd., which was sunctioned hy the Registrar of Companies en Octolier 21 , under the Hongkong Ordinances has been taken to avoid any misunderstanding as to the scope of the company's business, which the old name limited. Organized originally to cover

J. J. Keegan, General Manager of Sales. the Shanghai and Central China trades the corporation has now extended its activities with increasing success to the fields of North China and Manchuria, and has already developed substantial connections in Siberia. The corporation will shortly open a North China branck in order to bring its service closer to its


The Eastern Garage branch of the China Motors, Ltd.
patrons in that section of the nation, arrangements having been completed by Capt. J. E. Inch on his recent visit to that territory.

The China Motors, Ltd. will continue to operate its two well-established Garage and Service Stations-Eastern and Star-in Shanghai and maintain the North China branch mentioned before as being projected. In addition to these plants others will be opened in various centers of the Central and North China territory as fast as the development of the motar car in the nation demands.

The Shanghai Garage Company, Litd., as China Motors, Limited; was formerly known, was formed in September 1918, at which time it acquired the building known as the Star Garage at 125 Bubbling Well Road, where its head offices and principal place of business are now located. Since Capt. J. E. Inch and Mr. Colin Campbell, two of the founders of the new corporation were then operating the Fastern Gorage Company, that comprany wais amalgamated with the corporation and came under its. control. The management of the operating company was placed in the hands of Capt. I. H. Theh as Managimes Director, who has continued in this capacity since the fomming. A descriptive story of the Eastern Garage appeared in the August mumber of THE ORIENTAT MOTOR

Captain Inch has been associated with the developmenl of the motor (ay themgh its varions stages in (hina amt has added to this an intimate knowledges of the amt molic: industry of the Oceident. Paty in this le:ar, ha riturned from at trip to both tho Thnited states and bingland allow arranging for mew agencies and bether distributim. (apl Theh is leaving shamghai again this month lon :t sacomet
trip to the two countries, when he will attend the motor shows and transact other business necessitated by the increased scope of activity of China Motors, Ltd.

The Star Garage, which is four stories in height and has the largest floor space of any motor distribution and service agency in the Far East with $55,000 \mathrm{sq}$. feet of floor space and a building depth of 290 feet and a frontage on Bubbling Well Road of 75 feet, is a modern semi-fireproof strocture which was particularly built in 1.912 for a combined


ricolat and metor pilant, and is heated in the comere of the








ment for the shojes, and a show salon on the first floor on the Bubbling Well front. The new painting and rarmishing department has been placed on the second floor of the Burkill Road shops guaranteeing absolute freedom from dust and dirt. To add further precaution, dust-proof, heated rooms have been provided for the finer finishing work and the entire deprarment is one of the most modem in the Fur East.

The show salon, which takes the place of the private offices that tock up the entire first floor front the offices now occuping the front section of the second floor, is an innovation in motor plants in the Far Elast and will be the

 L.ta.. on " Chandlor chetasis.
first of its kind in ('hina. Modem winlow display by ground floor showooms has been used with success for rears but never before has a show salon boen attempted. These alterations will in no way, however, affect the showrooms and sales offices on the ground floor of the building.

The salon displays afproximately twelve to fifteen cars to advantage. Its fittings are luxurious and add a note of dignity and refinement to motor sales in China which have heretofore been lacking. The wall treatment is in white,
enhanced by a wide border of black and white perpendicular stripes that add a striking effect to the entire room. The floor is hard wood in an inlaid farquet design of beauty. Since the women of Shanghai and China, in keeping with the lead taken by their sisters of the Western world, are taking a greater interest in the purchasing of motor cars, the new salon is a distinct step in advance in this field.

It requires a trip through the main building of China Motors, Ltd., to realize its size. The ground floor at the Bubbling Well entrance is occupied on the left as you enter by a modern thewrocm, in which lights and backgrounds are used to good effect. On the right is a tire and accessory sales room modern to the smallest detail and most inviting to the motorists. In the rear of the accessories department is: the enquiry, floor sales and service offices of the garage. Across the entry way and back of the showroom is the office of the tire department sales force and a smaller showroom.

Going lack into the building on the ground floor is a large storage space for assembling and storing cars and flanking this are the warerooms of the tire department, where tires are stored in rooms specially built for the purrose, which have just been completed. These rooms are scientifically fitted to prevent deterioration of the tires while not in use.

From the Burkill Road entrance of the ground floor, access is given to the hire service department, a model of its kind for physical upkeep and service, which is in charge of a service superintendent whose office is on the right.

In addition to the show salon, the first floor of the building is occupied by the shops. Here is the body construction department, which is equipped to produce any| thing in either design or coachwork for its patrons. The
design of the bodies built is often in advance of the Western cars and the construction is of seasoned material carefully selected for the China climate and of only the most expert workmanship. The service includes both passenger and commercial types of bodies. The department, as aree aill of the divisions of the garage, is constantly under the direct supervision of a foreign expert, thoroughly conversant with the requirements of both thee East and the West. On this floor also are to be found the lathe rooms, forge rooms, and the battery charging plant. The latter is equipped in every technical detail to give efficient and adequate service.

A now innovation for the antomotive industry in China and the Far East has been added to the machine shops in factory machinery for the making of spare parts. These include gear cutting machines and the full equipment necessary for spare parts. These parts will be made for the patrons of China Motors, Ltd., and for those garages not so well equipped.

The new painting and varnishing department occupies the floor connecting with the body building department and the ground floor by two large freight elevators, accesible from either entrance. The workmen of the department are skilled articans and the finish given to the new and old cars is often far supericr to that of the manufacturer. Greater care, is taken, of course, due to individual service and hand work. Also on the second floot is the uphelstery department whire the work might well be envied by similla departments of the manufactures.

The tire repair department with a large modern steam vulcanizing plant, is located on the thind floor of the bailding. The vulcanizing plant is large enough to assure dependable and excellent workmanship with the added advantage of quick service.


Burlill Road entrance to Sereice lepartment.
The tire rerair department with a large modern steam, China Motors Ltd., will compare more than favorably with


The Hire Servier Iopartment on Burlill liond.


I corner of the new paint rooms-varuishing rooms adjoining on right.


A section of martine shops, shouring gear cutting muchine.
any of the distribution plants and service stations of the United States, Great Britain or Europe.

The active management of China Motors, Ltd., is vested in Capt. J. E. Inch, managing director, and Mr. J. J. Keegan, general manager of sales. The foreign staff of the corporation has recently been augmented by the amival of several technical experts who have been connected with various prominent firms at home and have had the advantage of wide experience in war service. As has been mentioned before, every department of the entire plant is under foreign supervision. A permanent native staff of 150 experienced Chinese who have been carefully trained by foreign experts to be highly skilled in the work necessary, is maintained.


A pert of assembling and repair shops on first Hiner.


Coachwork Department of the China Motors Ltd., Star Garage plant.

China Motors, Ltd., are the authorized representatives in this section of the world for the Rover, Standard and Lanchester cars of England, and Chandler, Cleveland, Hupmobile, Dodge and Premier of American make, as well as being distributors of the Crossley-all widely known and acceptable cars in their respectiver fields. In addition to the passenger agencies, the company represents the Clydesdale truck of American make and the Leyland lorry of Great Britain. The company has the sole agency for the Dixie Magneto made by the Splitdorf Company, Newark, N. J. All standard makes of accessories and tires are carried in that department. The organization has also pioneered in the development of the motorcycle and represents the Indian and A. B. C. lines.

With the reorganization for a larger field of activity, it may be expected that in a number of years from now China Motors, Ltd., will have realized the vision which first prompted the founding of the Shanghai Garage Co., Ltd., and gave it its impetus. It is certain that the Corporation will be successful in all new fields entered, having built carefully their foundation for business and having
acquired the experience necessary before making the attempt. China Motors, Ltd., should be a name to conjure by in the future automotive trade of the nation, when


Steam vulcanizing plant. good roads connect the burious sections of the commery and the industrial and commercial development indicated by present events has complutely taken place.



# PRIGES AND SPECIFICATIONS OF AMERICAN PASSENGER GARS 

Falling prices on the American market have caused many changes in this list since the October issue. These are according to the latest announcements received up to Noxember 10. Prices quoted are in gold dollars, F. O. B. Factory. Specifications and prices quoted are on stock models exclusively, and do not show differences necessitated by additions to or alterations in equipment on export cars.

They also do not include crating, railway and ocean freightage, insurance or other similar items.

Model Motor Ignition Starting wh Tighting wB Rims Pass. Pass. Pass. Sedan

## ALLEN

Series 43 4.32 $\times 5$ Conn A-Lite 110 32xt SS ...... $\$ 1595$
ALSACE
AMERICAN
$\begin{array}{lllllllll}\text { B } & 6-3 \frac{1}{4} \times 5 & \text { A.Kent Wsths } & 122 & 32 \times 4 & \text { SS } & \$ 2485 & 2485 & 2550\end{array} \$ 2950$ ANDERSON
 APPERSON
$\begin{array}{lllllllll}8-20 & 8-3 \frac{1}{4} \times 5 & \text { Remy Bijur } & 130 & 34 \times 4 \frac{1}{2} & \text { SS } & 3350+3550 & 3500 & 4500\end{array}$ ARGONNE
AUBURN
$639-H \& K 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Remy Remy $120 \quad 33 \times 4$ SS $1945 \quad 1895+1895 \quad 2775$ AUSTIN
BEGGS
BELL $6-33 \times 4 \frac{1}{2}$ Conn A-Lite $120 \quad 33 \times 4$ SS

BIDDLE
BOUR-DAVIS
$21 \quad 6-3 \frac{1}{2} \times 5 \frac{1}{4}$ Wsths Wsths $126 \quad 33 \times 4 \frac{1}{2}$ SS $\ddagger+2585 \quad 2535 \quad 2595$ BRADLE
 BRISCOE
$4-4 \times 5 \frac{1}{2}$ Berling USL $125 \quad 34 \times 4 \frac{1}{2}$.SS ...... 7400
BUICK

 CADILLAC
$\begin{array}{llllllllll}59 & 8-3 \frac{1}{8} \times 5 \frac{1}{8} & \text { Delco } & \text { Delco } & 125 & 35 \times 5 & \text { SS } & 3940 & +3940 & 4090 \\ \text { CANERON } & 4750\end{array}$ CAMERON
$\begin{array}{llll}45 & 6-3 \underset{3}{3} \times 4 \frac{3}{2} & \text { Conn } \\ 55 & 6-2 \frac{2}{2} \times 4 \times 4 & \text { Conn }\end{array}$
CASE
V 6-3. $\times 54$ Delco
CHALMERS
$35-\mathrm{B} \quad 6-34 \times 4 \frac{1}{2}$ Remy
CHAMPION
CHAMPION
K.O. $4-3 \frac{3}{2} \times 5$ De

CHANDLER
6-32 x5 Boseh G\&D 123 33x4 $\quad$ SS +1895 ...... $1895 \quad 2925$
CHEVROLET
$490 \quad 4-3 \frac{11}{16} \times 4$ Remy A-Lite 102 30x32 $\quad 795820$...... 81375
F-B $\quad 4$ - $31 \frac{1}{1} \times 5.5 \frac{1}{2}$ Remy A-Lite $110 \quad 33 \times 4$ SS $1320 \quad 1345$...... 2075
CLEVELAND $6.3 \times 4 \frac{1}{2}$ G\&D
COLE, Aero-Eight
$870 \quad 8-3 \frac{1}{2} \times 4 \frac{1}{2}$ Delco Delco 127 33x5 SS ...... 3250 COLUMBIA

## COMET

C-53 6.37x5t Wugner Wagner $125-30 \times 4$ SS
COMMONWEALTH
 CRAIG-HUNT
CROW-ELKHART
L-55 4-33 $\times 5$ Conn H-55 6-3185 Comn
CUNNINGHAM
59-A $8-33 \times 5$ Delco
Dyneto $111 \quad 32 \times 3 \frac{1}{2}$ SS $\ddagger 1195 \quad 1195+1345 \quad 1995$
Dyneto $\begin{array}{llllll}117 & 32 \times 3 \frac{1}{2} & \text { SS } & \text { SS } & +1195 & 1195 \\ \text { SS } & +1345 & 199.5\end{array}$ CYCLOMOBILE

DANIELS
 DAVIS
$51663 \frac{1}{4} \times 4 \frac{1}{2}$ Delco Delco $120 \quad 33 \mathrm{x} 4$ SS ….. $2185+2350$ 31~5 DISPATCH
G $\quad 4-3+3 \times 5$ Bosch USI, $120 \quad 34 \times 4 \quad$ SS $\ddagger 1290+1350 \quad 1350$
DIXIE FLYER
4-3 $3 \times 5$ Conn
1)yneto $\begin{array}{lllll}112 & 32 x & \text { SS } & 1595 & 1595\end{array}$

1965
DODGE BROTHERS
 DORRIS
$\begin{array}{lllllllll}6-80 & 6-4 & \times 5 & \text { Bosch Wsths } & 132 & 33 \times 5 & \text { SS } & \ldots . . & +4750 \\ 4750 & 5720\end{array}$ DORT
DUPONT ${ }^{4}$
$4-3 \frac{3}{2} \times 5$ Bosch Wisths $105 \frac{1}{2} 30 \times 3 \frac{1}{2}$... $1085 \frac{1085}{5}$...... 176.5 $4-3 . \frac{15}{6} \times 5 \frac{1}{8}$ Eisman Wisths $12432 \times 4 \frac{4}{2}$ SS $\ldots . . .+4000$

Model Motor Ignition Lighting wB Tires Rims Pass. Pass. Pass. Sedan

## ECONOMY

$6-46 \quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Conn A-Lite $115 \quad 33 \times 4 \quad$ SS $\$+1895 \$ 1895 \quad . . . .$. \$2475 ELCAR
$\begin{array}{lllllllllll}4 & 4-32 \times 5 & \text { Delco } & \text { Delco } & 116 & 33 \times 4 & \text { SS }+1495 & 1495 & \ldots . . & 2195\end{array}$ ELGIN ${ }^{6-3} \mathbf{3} \times 4 \frac{1}{2}$ Delco Delco $1163^{33 \times 4}$ SS +1795 1795 ...... 2495

ESSEX
$4-3 \frac{3}{8} \times 5$ Delco Delco $108 \frac{1}{2} 32 \times 4$ SS 1595 1595 ...... 2450
FERRIS
FORD $\quad 6-3 \frac{1}{2} \times 54$ Own L-N $130 \quad 32 \times 4 \frac{1}{2}$ SS $\ldots \ldots$.

| T1920 | 4-3 |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $3 \times 4$ | Ford | Own | 100 | $30 \times 3 \frac{1}{2} x$ | C | 465 | 510 | $\ldots .$. | 795 | FRANKLIN

$\begin{array}{lclllll}9 B & 6-31 \times 4 & \text { A.Kent Dyneto } 115 & 32 \times 4 & \text { SS } & 2400+2500+2600 & 3600\end{array}$ GARDNER

$6-40 \quad 6-3 \frac{1}{8} \times 5$ Wsths Wsths 119 32x4 SS +16951695
GRANT
HX 6-3k x 4 等 A.Kent Bijur 116 32x4 SS $1750 \quad 1750$...... 2675 H.-C.-S. $4-3 \frac{5}{5} \times 5 \frac{1}{2}$ Delco Delco $120 \quad 32 \times 4 \frac{1}{2}$ SS $\ldots \ldots .+2950$ HALLADAY
 ( $4-4 \frac{1}{8} \times 4 \frac{1}{2}$ Conn A-Lite $12532 \times 4 \frac{1}{2}$ SS
$54 \quad 6-34 \times 4 \frac{1}{2}$ Delco Delco $121 \quad 32 \times 4$ SS $2365 \quad 2365$...... 2885 HARROUN
A-1 $4-3 \frac{1}{4} \times 5 \frac{1}{4}$ A.Kent Remy 106 30x $3 \frac{1}{2} \ldots+1095995$
$42 \begin{array}{llllllll}4-3 \frac{1}{4} \times 5 & \text { Conn } & \text { Dyneto } 115 & 32 \times 4 & \text { SS } & \ldots . . . & 1695 & +1695 \\ 2595\end{array}$ HAYNES


206-B $\quad 6$-3 $3 \times 4 \frac{1}{2}$ Remy Wsths $120 \quad 33 \times 4 \quad$ SS +19851985
HOL-B 6 6-3 $\times 4 \frac{1}{2}$ Remy Wsths 120 33x4 SS +19851985 ...... ...... $\begin{array}{lllllllll}1 & 6-3 \frac{1}{2} \times 4 \frac{1}{4} & \text { Holmes Dyneto } 126 & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & +3050 & 3100 & 4000\end{array}$ $\begin{array}{lllllll}\text { Super-6 } \\ 6-3 \frac{1}{2} \times 5 \\ \text { Delco } & \text { Delco } & 125 \frac{1}{2} & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & +2435 \\ 2435 & 3200\end{array}$ HUFFMA
$\begin{array}{lllllll}6-3 \frac{3}{x} \times 4 \frac{1}{2} & \text { Conn } & \text { Dyneto } & 120 & 32 \times 4 & \text { SS } & 1995 \\ 1995\end{array}$
HUPMOBILE
$\begin{array}{lllllllll}\text { R-3 } & 4-3 \frac{1}{4} \times 5 \frac{1}{2} & \text { A.Kent Wsths } & 112 & 32 \times 4 & \text { SS } & 1760 & 1760 & \ldots . . \\ 2600\end{array}$
$\begin{array}{llllllll}6-3 \frac{1}{2} \times 4 \frac{1}{2} & \text { Remy } & \text { A-Lite } & 121 & 33 \times 4 & \text { SS } & \ldots . . & 2150 \\ +2885 & 3650\end{array}$
$\begin{array}{lllllllll}6-28 & 6-3 \frac{1}{2} \times 5 \frac{1}{4} & A-L i t e & A-L i t e & 126 & 34 \times 4 & \text { QD } & 2750 & 2750\end{array} 2750$
JORDAN
$\begin{array}{llllllllll}\text { F } & 6-3 \frac{1}{2} \times 5 \frac{1}{4} & \text { Delco Bijur } & 127 & 32 \times 4 \frac{1}{2} & \text { SS } & \ldots \ldots . & \ldots . . & 2875 & 3700\end{array}$ KING
$\begin{array}{llllllllll}\mathrm{H} & 8-3 & \times 5 & \text { A.Kent Wsths } & 120 & 32 \times 4 \frac{1}{2} & \mathrm{SS} & 2750 & +2735 & 2725 \\ 4235\end{array}$ KISSEL KAR
$\begin{array}{lllllll}\text { Custom Built } 6-5 \frac{1}{15} \times 5 \frac{1}{2} & \text { Remy Remy } & 124 & 32 \times 4 \frac{1}{2} & \text { SS } & 3475 & +3475 \\ \text { KLINE } & 3475 & +3975\end{array}$ KLINE
6-55-J $\quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Conn Wagner $121 \quad 33 \times 4$ SS $\ddagger 2265 \quad 2290+2265 \quad 3190$ LAMARNE
$8-34 \times 5 \frac{1}{2}$
LAFAYETTE
LEACH ${ }^{8-3 \frac{1}{4} \times 5 \frac{1}{4}}$ Delco Delco $1323^{33 \times 5}$ SS $5625 \quad 5625$...... 7400
,
6-34x.514 Delco Delco $126 \quad 32 \times 4 \frac{1}{2}$ SS $4800 \quad 4950 \dagger 4800$
LEXINGTON LIBERTY
10-C $\quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ A.Kent Wagner $117 \quad 32 \times 4$ SS $1795 \quad 1795+1885 \cdot 2850$
$\begin{array}{rlllllllll}8-3 \frac{3}{4} \times 5 & \text { Delco } & \text { Delco } & 130 & 33 \times 5 & \text { SS } & \ddagger+4500 & 4600 & 4600 & 6000\end{array}$ LOCOMOBILE
LORRAINE ${ }_{\text {LO }}^{4-4 \frac{1}{2} \times 5 \frac{1}{2}}$ Berling Wsths $142 \quad 35 \times 5 \quad$ SS 77650 ...... 755010000
$4-3 \frac{1}{4} \times 5$ Comn Wsths 114 32x4 SS ...... 1575
McFARLAN
$127 \quad 6-4 \frac{1}{2} \times 6$ Wsths Wisths $140 \quad 35 \times 5$ SS $5300+5100 \quad 5100 \quad 6400$
6-31855 A.Kent Remy $115 \quad 33 \times 4$ SS ...... 1550
MAIBOHM
$\begin{array}{lllllllll}\text { B } & 6-3 \frac{1}{8} \times 4 \frac{1}{4} & \text { A.Kent Bijur } & 116 & 32 \times 4 & \text { SS } & 1475 & 1475 & \ldots . . . \\ \text { MANEXAL }^{2} & 2235\end{array}$




## MAXWELL

| 25 | $4-35$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |$\times 4 \frac{1}{2}$ A.Kent Simms $109 \quad 30 \times 3 \frac{1}{2}$ C $\quad \$ 995 \quad \$ 995 \quad \ldots \ldots . \$ 1695$


METZ
$\begin{array}{lllllllll}\text { Master, } 6 & 6-3 \frac{1}{3} \times 5 & \text { Conn } & \text { Wsths } & 120 & 32 \times 4 & \text { SS } \ddagger 1995 & 1995 & \ldots . . . \\ 2895\end{array}$
MITCHELL
$\begin{array}{lllllllll}\text { E.40 } & 6-3 \frac{1}{4} \times 5 & \text { Remy Remy } 120 & 33 \times 4 & \text { SS } & \ddagger \\ 1750 & 1750 & \ldots . . . & 2900\end{array}$

MOLLER
4-2 $2^{3} \times 4$ Eisman Dyneto $100 \quad 28 \times 3 \quad \ldots \quad 1100 \uparrow 1150$
MONITOR
$\begin{array}{lllllllll}6-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Dyneto } \ldots \ldots . & 121 & 33 \times 4 & \ldots & 2475 & 2475 & 3475 & \ldots . .\end{array}$
MONROE

| $\begin{array}{c}\text {-9 } \\ \text { MOON }\end{array}$ | $4-34 \times 4 \frac{1}{2}$ | Conn | A-Lite | 115 | $32 \times 3 \frac{1}{2}$ | SS | 1440 | 1440 | $\ldots \ldots$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6-48$ | $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Delco | Delco | 118 | $32 \times 4$ | SS | 2085 | 1985 | $\ldots .$. |
| 6.6855 |  |  |  |  |  |  |  |  |  |

$\begin{array}{cclllllllll}6-48 & 6-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Delco } & \text { Delco } & 118 & 32 \times 4 & \text { SS } & 2085 & 1985 & \ldots . . & 2985 \\ 6-68 & 6-3 \frac{1}{2} \times 5 \frac{1}{4} & \text { Delco } & \text { Delco } & 122 & 35 \times 5 & \text { SS } & 2585 & \ldots . . . & 2485 & 3485\end{array}$
MOORE
$\begin{array}{lllllllllll}\mathbf{F}^{2} & 4-3 \times 5 & \text { Conn } & \text { A-Lite } & 108 & 30 \times 3 \frac{1}{2} & \text { QD } & \ldots . . & 1175 & \ldots . . & \ldots . . \\ \mathbf{N A S H}^{2} & & & & & & & & & & \\ 681 & 6-3 \frac{3}{4} \times 5 \frac{1}{4} & \text { Delco } & \text { Wagner } & 121 & 33 \times 4 & \text { SS } & 1695 & 1695 & 1875 & 2895\end{array}$
NASH $434 \times 5$
$11232 \times 3 \frac{1}{2}$;
$\begin{array}{lllllllll}\text { NATIONAL } \\ \text { Sextet } 6-3 \frac{1}{2} \times 5 \frac{1}{4} & \text { Delco } & \text { Wsths } & 30 & 32 \times 4 \frac{1}{2} & \text { SS } & 3750 & +3750 & 3750 \\ 4950\end{array}$ NELSON
D
NOMA
$4-3 \frac{1}{8} \times 4 \frac{3}{4}$ Bosch
NORWALK
$6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Delco Delco $128 \quad 31 \times 4 \frac{1}{2}$ SS $2800+2900$ $4-3 \frac{1}{2} \times 5 \frac{1}{2}$ Delco

Dyneto $11632 \times 3 \frac{1}{2} \mathrm{SS}$ $\qquad$ 85
...... .....

| OAKLAND |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 34-C | $6-2 \frac{13}{6 \times 4} \times 4$ Remy $^{2}$ | Remy | 115 | $32 \times 4$ | SS | $\ddagger 1395$ | 1395 | $\ldots .$. |


$\begin{array}{lrlllllllll}45-\mathrm{B} & 8-27 \times 43 & \text { Delco } & \text { Delco } & 122 & 33 \times 4 \text { 古 } & \text { SS } & \ldots . . & +2045 & 2045 & 2950 \\ 37-\mathrm{A} & 6-2 \frac{1}{1} \times 43 & \text { Remy } & \text { Remy } & 112 & 32 \times 4 & \text { SS } & 1450 & 1450 & \ldots . . & 2145\end{array}$
OLYMPIAN
OVERLAND
A-Lite 116 32x3$\frac{1}{2} \ldots$...... 1585 $\qquad$
$4 \quad 4-3 \frac{3}{9} \times 4$ A-Lite A-Lite $100 \quad 30 \times 3 \frac{1}{2}$ QD $895 \quad 895 \quad \ldots \ldots$. OWEN-MAGNETIC

PACKARD
3-25 $\quad 12-3 \times 5$ Delco Bijur $\left\{\begin{array}{llll}136 & 35 \times 5 & \text { SS } \\ 128 & 35 \times 5 & \text { SS }+5200 & 5200\end{array} \begin{cases}6000 & \ldots \ldots . \\ 5250 & \ldots . .\end{cases}\right.$
PACKARD
$\begin{array}{lllllllll}\text { New-6 } & 6-3 \frac{3}{9} \times 4 \frac{1}{2} & \text { Delco A. Kent } & 116 & 33 \times 4 \frac{1}{2} & \ldots & 3640 & 3640 & \ldots . . \\ 4900\end{array}$


| $6-55$ | $6-3 \frac{1}{2} \times 5$ | $5 \frac{3}{4}$ | A.Kent G\&D | 127 | $33 \times 4 \frac{1}{2}$ | SS | $\ldots . .$. | 2895 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

PARAGON


## PILOT

$\begin{array}{lllllllllll}\text { 6-45 } & 6-3 \frac{1}{8} \times 5 & \text { Delco Delco } 120 & 32 \times 4 & \text { SSt } \$ 1940 & \$ 1895 & \ldots . . & \$ 2900\end{array}$ PORTER
PREMIER
$\begin{array}{llllllllll}6-D & 6-33 \times 5 \frac{1}{2} \\ \text { Delco } & \text { Delco } & 127 & 32 \times 4 \frac{1}{2} & \mathrm{SS} & 4600+4600 & 4600 & 5800\end{array}$ R \& V-KNIGHT
$\begin{array}{lllllllll}\mathrm{R} & 4-33 \times 5 & \text { Wagner Wagner } 115 & 32 \times 4 & \mathrm{QD} & \ldots . . & 2350 & \ldots . . & 2900\end{array}$ REO 6-3 $\frac{1}{2} \times 4 \frac{1}{2}$ Wagner Wagner $127 \quad 32 \times 4 \frac{1}{2}$ QD $3350+3350 \quad 33504000$ $1920 \quad 6-3 \frac{9}{16} \times 5$ N. E. N. E. $120 \quad 33 \times 4 \quad$ SS $\quad{ }_{+}^{+} 1850 \quad 1850 \quad \ldots \ldots .2850$ REVERE
$\begin{array}{lllllllll}\text { A } & 4-4 \frac{3}{8} \times 6 & \text { Bosch Wsths } & 131 & 32 \times 4 \frac{1}{2} & \text { SS } & 4850 & 4650 & +4650 \\ 6500\end{array}$ ROAMER
C-6-54 6-312x5 5 Bosch Bijur 128 32x4 SS 3175 t3075 $3325 \ldots \ldots$ SAXON

4-33x5 Remy Wagner 112 32x93 SS ..... 1785 ...... 2685
SAYERS
$\begin{array}{lllllllllll}\text { SIX-42 } 6-3 \frac{7}{4} \times 4 \frac{1}{2} & \text { Delco Delco } 118 & 33 \times 4 & \text { SS } & 219.5 & 2195 & \ldots . . & 329.5\end{array}$ SCRIPPS-BOOTH
 SENECA $4-3 \frac{1}{8} \times 4 \frac{1}{2}$ Conn A. C. $108 \quad 30 \times 3 \frac{1}{2}$ C $1185 \quad 1185$...... ...... SEVERIN
SHERIDAN ${ }^{6-3 \frac{1}{2} \times 5 \frac{1}{4}}$ Wagner Wagner $122 \frac{1}{2} 32 \times 4$... $3 .$.
SINGER ${ }^{4-31 \frac{1}{6} \times 5 \frac{1}{4}}$ Remy A.Lite $\quad 116$ SINGER
${ }_{20}^{20} 6-4 \times 5 \frac{1}{2}$ Bosch Wsths $138 \quad 33 \times 5$ SS $\ldots .$. t. $5800 \quad 5800 \quad 7800$ SPACRE ${ }^{4-3 \frac{1}{2} \times 5}$ Conn Wsths $112 \quad 32 \times 3 \frac{1}{2}$ SS 1295 1295 ..... $\ldots$.... SPACKE
S-20 2-3年x3.67A.Kent $\ldots \ldots .90 \quad 28 \times 3 \quad \ldots \quad 295$ STANDARD
I 8-34x5 A.Kent Wsths 127 34x44 SS $\ldots \ldots$ †.... $3400 \quad 3400 \quad 5000$ STANLEY
$\begin{array}{lllllllllll}\text { Steamer } & 2-4 \times 5 & \ldots . . & \ldots . . & 130 & 34 \times 4 \frac{1}{4} & \text { SS } & \ldots \ldots & 3950 & 3950 & 5775\end{array}$ STANWOOD 5-34×4 $\frac{1}{2}$ Willard A.Kent 118 33x4 Si ...... 2050 ...... ..... STEARNS
$\begin{array}{lllllllll}\text { SKL4 } & 4-33 \times 55 \\ \text { A.Kent Wsths } & 125 & 34 \times 4 \frac{1}{2} & \text { SS } & +2475 & 2450 & 2675 & 3450\end{array}$ STEPHENS
SalientSix $6-3 \frac{1}{3} \times 4 \frac{1}{2}$ A-Lite A-Lite $122 \quad 33 \times 4 \frac{1}{2}$ SS $2400+2400 * 2400 \quad 3400$ STUDEBAKER
$\begin{array}{llllllll}\text { Spec.-6 } 6-3 \frac{1}{2} \times 5 & \text { Wagner Wagner } 119 & 32 \times 4 & \text { Sis } & 1795 & 1795 & +1795 & 2 \times 35\end{array}$

 $\underset{H}{\text { STUTZ }} 4-43 \times 6$ Delco Remy $\left\{\begin{array}{llllll}130 & 32 \times 4 \frac{1}{4} & \text { SS } \\ 3425 & 3525 & 3525 & \ldots . .\end{array}\right.$ TFMPLAR

VELIE
 $3466-3 \frac{1}{2} \times 4 \frac{1}{4}$ A.Kent Wsths $112 \quad 32 \times 3 \frac{1}{2}$ … WESTCOTT


 W INTH ${ }^{\text {TR }}$
 WINTON
*6-passenger. $\dagger 4$-passenger. $\ddagger 3$-passenger.




## haUl by Truck

## BRITISH MOTOR SPECIFICATIONS AND PRICES.

Prices are fluctuating in Eingland as well as America. This list is compiled as of Noxember 10, from the latest information, and contains many changes since the October issue. The term chassis when used includes complete equipment less only the coachwork. No uniform equipment is quoted by the various manufacturers. In many instances self-starters are
extra. The numerals connected by the sign $x$ are cylinder dimensions in centimeters.

$\begin{aligned} \text { NAPIER. } & 6 \text {-cyl. } 102 \times 12740-50 \text { h.p. Chassis... } \ldots \quad £ 2,100 \\ 6 \text {-seater Touring } & 2,625\end{aligned}$
NEWEY $\quad 4$-cyl. $69 \times 12012-15$ h. Chassis $\quad$ Louring 2,625
4 -seater Touring
NEW ORLEANS. 4 -cyl. $76 \times 16520$ h.p. Chassis 4 -seater Touring
NEWTON. 4 -cyl. $69 \times 14012$ h.p. Chassis $\ldots$......
ORPINGTON. 4-cyl. 10-12 h.p. Chassis
2 -seater
PALLADIUM. 2 -cyl. $89 \times 10710$ h.p. 4 -seater Touring PARNACOTT. 2 -cyl. $98 \times 98$ 12-20 b.p. 2 -seater PERFEX. 22.5 Chassis 2-seater...
PHENIX. 4-cyl. $69 \times 10011.9$ h.p. Chassis
3 -seater
RICHARDSON. 2 -cyl. $85 \times 858$ - 10 h.p. 2 -seater RILEY. 4 -cyl. $65.8 \times 11011$ h.p. Chassis

2-seater 4 -seater Touring...
ROLLS-ROYCE. 6 -cyl. $114 \times 12140$-5e h.p. Chassis... $\quad 650$ Complete 2,600 to 2,800 ROVER. 4-cyl. $75 \times 13012$ h.p. Chassis ... ... 615
2-seater ... ... 735

5 -seater Touring $\quad$... 775
ROVER, Light Model. 2 -cyl. 8 h.p. 2-seater
RUSTON-HORNSBY. 4 -cyl. $80 \times 13016$-20 h.p. Chassis
5 -seater Touring
SINGER. 4 -cyl. $63 \times 8810$ h.p. 2 -seater $\begin{gathered}\text { Coupé... }\end{gathered}$
625
750
SIZAIRE-BERWICK. 4 -cyl. $95 \times 16025$-50 h.p.
5 -seater Touring...
STAFFORD. 4 -cyl, $69 \times 12011.9$ h.p. Chassis $\begin{gathered}\text { 4-seater Touring }\end{gathered}$
STANDARD. 4 -cyl. $62 \times 1109.5$ h.p. Chassis $\begin{gathered}\text { 2-seater } \\ \ldots\end{gathered}$
2 -seater
4-seater
STAR. 4 -cyl $80 \times 150-15.9 \mathrm{~h}$. Chessis


5 -seater Touring ... ... 1,065 800
550
695 600 900 425 525 355 300 15

500 610

| STOREY. 4 -cyl. $85 \times 13220$ b.p. 5 -seater Touring ... 4 -cyl. 14.3 h.p. Chassis $2-4$ seater Touring .. | $\begin{array}{r} £ 850 \\ 600 \\ 750 \end{array}$ |
| :---: | :---: |
| STRAKER-SQUIRE. 6 -cyl. $80 \times 13020-25$ h.p. Chassis | 1,200 |
| 2 -seater | 1,600 |
| 4 -seater Touring | 1,650 |
| SUNBEAM. 4-cyl. $80 \times 15016 \mathrm{h.p.Chassis}$ | 930 |
| 5 -seater Touring | 1,225 |
| Limousine | 1,475 |
| SUNBEAM. 6-cyl. 24 h.p. Chassis ... | 1,215 |
| 5 -seater Touring | 1,510 |
| Limousine ... | 1,875 |
| SWIFT. 4-cyl. $63 \times 9010 \mathrm{~h} . \mathrm{p} .2$-seater | 50 |
| TALBOT. 4 -cyl. $101.5 \times 14025$ h.p. Chassis | 1,150 |
| 4 -seater Touring | 1,515 |
| UNIC. 4-cyl. 13 h.p. Chassis ... ... | 970 |
| VARLEY-WOODS. 4 -cyl. $69 \times 120$ 12-22 h.p. Chassis | 30 |
| 4 -seater Touring | 800 |
| VAUXHALL. 4 -cyl. $95 \times 14025$ h.p. Chassis $\ldots$ | 1,300 |
| 5 -seater Touring | 1,750 |
| 4 -cyl. 30 h.p. Chassis ... | 1,500 |
| 5 -seater Touring ... | 1,960 |
| VULCAN. 4-cyl. $90 \times 13020$ h.p. 5 -seater Touring | 1,000 |
| 4 -cyl. 16 h.p. 5 -seater Touring | $1,825$ |
| WAVERLY. 4 -cyl. $76 \times 12715$ h.p. Chassis ... | 600 |
| $2 / 3$-seater | 675 |
| 5 -seater Touring... | 00 |
| WESTWOOD. 4 -cyl. $69 \times 12011.9$ h.p. Chassis | 500 |
| 4-seater Touring...' | 625 |
| WOLSELEY TEN. 4-cyl. $10 \mathrm{~h} . \mathrm{p}$. Two-seater... | 500 |
| Three-seater | 585 |
| Coupé ... ... | 00 |
| WOLSELEY FIFTEEN. 4 -cyl. $80 \times 13015 \mathrm{~h} . \mathrm{p}$. Touring | 800 |
| Saloon | 1,000 |
| WOLSELEY TWENTY. 6-cyl. $20 \mathrm{~h} . \mathrm{p}$. Touring de luxe |  |
| Landaulet | 1,400 |
| Coupé | 1,450 |
| ZEPHYR. 4 -eyl. $69 \times 13011.9$ h.p. Chassis | 500 |
| Two-seater | 625 |
| Four-seater | 650 |

(2-4 seater Touring … ... 750


## Bugatti Wins French Event.

(Continued from Page 9)
huilder of the cars, although of Italian mationality, wan obliged to leave Alsace and immediately took up the work of deaigning and producing ripplane engines tor the Alliad forces. The racing cars were brought into France beione the end of the war and were made use of for carburetor, spark plug and other experiments.

The engine used on the Bugatti cars is : four-cylinder in one rasting of 2.5 by 3.9 in. bore and stoke. Themere four hat-faced valves per cylinden opetated by an overheme camshaft and curved rocker ams, the emshaft being oper led by a vertical shaft and bovel gearing. Piktons ate of alumimm, with thee sings, and lubrication is under pres sure. 'The power oltanct is 29.5 at 2750 memotions. 1 Kenith carburetor is employed and ignition is by high tension magneto. On No. 1 ("ar, which wats dispuatified, smgh pluge were used; on the two others there were 11. : phes to each cylinder.

Ono of the mest remarkalde femteres. of these cats is the way thoy held to the road at high spered. In thin wespert



iswerted quater elliptic at the rear. 'The gem antio in the
 covered the contire distance without gettting out of his seat.

 and stroke. The valves, with inclined stome, an: on oplys. to sides, operated by two camphafte in the has chamber.

 and to have a practically flat powe come up to :3.2010 motutions.




 ing 1 d ds are lubular.





 111: ! : い

## WHITE MAKES CONVERTIBLE BODY.

Lively Interest Bring Shown in England and America.


Abore-The windums open antom ticall! with the dor. The top, is "p, but the windows are still concealed

Tively interest is being shown in England and Amen a in the new convertible body invented by Claude GrahameWhite, the well-known aviator and manufacturer. Mounted on any chassis, it can be changed from touring car to sedirit in two minutes by one man. Some entirely new principles are involved which differentiate the new car quite sharply from the cabriolet and other accepted examples of convertio?, or semi-convertible types.

When the ear is open it appears exactly like an ordin:ny well-built touring car, with no clumsy superstructure indicating the u-blal maseive top, no joints or other things to detract fiom its appearance. In the closed position it lorisa like and is a true sedan.
fts sectet lies in a complete patented sme-man top and the appearance of folded windows from compartments concealed in the outside walls of the body itself. There are mis folding pilla:s and the body is free from rattles and syueak: The wincows ale so aranged that. when the top is up, the: epen and close with the doors. There is a glass division to separate diver and rear seat occupants when desired.

The Grahame-Thate Compamy is plaming to have a lavge number of these bodies built in Ameria?. In Enylan? it has a!ready contracted to supply in quantity to such firme
as Rolls-Royce, Daimler, Talbot, Lanchester, Vauxhall and Armstrong-Siddeley

## REAR SIGNALS FOR CLOSED CARS.

## American Journal Holds Them as Essential.

With the great increase in the number of closed cars, in which it is difficult for the driver to signal his intentions to the drivers of other cars behind him, some simple form of rear signalling device should become almost standard, says an American motor magazine. In the larger cities especially many accidents occur which could have been avoided if every driver knew just what the cur ahead of him was going to do. There should bs a ready market for simple, reliable and comparatively inexpeneive devices of this character. A great deal of educational work must be done in levelofing this market, however, for very few owners or drivers, even of enclosed cars, realize the value of the rear signal, and what is more important, the necessity for using it correctly after it is installed.

This advice might well apply to Shanghai where closed cars are becoming increasingly numerous.

## TRUCKS FOR EVERY PURPOSE

## What are your requirements?



## THORNYCROFT <br> 3 TON

ENGINE 4-CYL. MAXIMUM H.P. 40. MAGNETO IGNITION, WORM DRIVE. WHEEL BASE 13 FT. 7 IN. STEEL WHEELS, TWIN IN REAR.

## G. M. C. 3 TON

WORM DRIVE, FOUR SPEEDS FORWARD, STEEL WHEELS ENGINE, 4-CYL. S. A. E. RATING 32.4 H.P. ACTUAL 42.5 H.P.


## WHITE 2 TON

4-CYL. 30 H.P. THREE SPEEDS FORWARD-BUILT FOR QUICK DELIVER SERVICE.

All of the above chassis in stock. Any type of body may be built to order in our extensive body building works. The Shanghai Horse Bazaar \& Motor Co, Ltd.

Estab. 1851.
SHANGHAI
36 Bubbling Well.

# FRENCH AWAIT PRICE CHANGES 

Market is Exceedingly Dull with Nakers Holding Stoeks.

By in Anmbicu correapondiat in France.

Ttade conditions in Frame are decidedly dull. 'I hres months ago the botwom dropsel out oi the truck market, for so many amy rehiel:s had been unloadel that m"nnfacturers found it difficult to sell new stock. Beiliet, who had gone aheat on truck production on a big scale, was the most severely hit and found himsell with 1,010 mesk trucks on hand. Renault also beld big stocks.

There months :yo the pasenger car market went dead. If' to that time tike demant hat been strone an it practically anything on wheels could be sold at fancy prices. Almost overnight the demand died out, and not cnly was it impossible to sell used cars but even those firms in production found that clients would not take delivery. Whereas three or four weeks previously clients were paying premiums to get delivery of new cars, when the slump came they refused to take delivery of cars even when offered at less than the catalog price.

The attitude of the public is rather difficult to explain. The idea seems to have got abroad that the price: of antomobiles, which has been increasing by leaps and bounds for the last eighteen months, is bound $t$, d.oi down at the same rapid rate. The situation has bsen aggravated by increased cost of operating, for very heavy texes have been applied, and gasoline is costly. At the present moment the gasoline situation has eased somewhat, but only a few
 per gallon.

Dealers report that clients refuse to come and take delivery of new cars on which they have paid deposits. This is confirmed by visits to showrooms an: garages, where rows of new Citroens and Renaults are $t$ be found. When the last increase in prices went ints effect a few weeks ago, large numbers of orders were cancelled. One dealer reports that of 26 cars on order, 25 were cancelled when clients were informed of a further increase.

Since this movement went into effect manufaturers have cut down on production. Citrcen, who had renched 70 per day and was expectimg to get up to 100 by the fall, has dropped to 24 per day. Workmen have been laid off by nearly all the factories, and there are fears that a hard winter will have to be faced unless conditions improve rapidly.

It would be an exaggeration to call this movement a slump. It is nothing more than a temporary scare on the fart of the buring public, and will only have serious effect if it continues. The fact that there are still only a small proportion of the factories in full production is proof that the market has not been swamped. The ponular idea that prices will come down with a run if only clients will held
 mat lo. a littl. picu cutine, and Ford has alrealy set the (xample in this respet. hut it in certhin that clients will
 immediately after the armistice. The fact that all makers have imenoel thei! pio.. at lea-1 101 peram sine their
 peculiarities of the European situation and reveals clearly the in-tal ilizy of the momet.

By reason of the events of the last two months the fceling in mis wather widespead that a mi-tate has leen made in not holding a Paris show this rear. When they wied agatusi a show Fienf! makers were s; full up with orders that they did not see any possibility of regaining their leeway before two years. Now there have bsen so many cancellotions that they are becoming nervons, and a. show as a fillip to business would ba more than welcome. It is entirely because they are all a full year behind on deliverises, and that all ordens have net been cancelled, that the factories have been able to keen going during the last two monthe. It is known that some inustant French facturies have not booked a single new crder during a perioa of six weeks.

## HOW THEY SELL 'EM IN LONDON.

## Street Stands and Signs Comprise Used Car Market.

Some months ago there was seen standing outside well-known London lotel a much-used car bearing a famous name, says : recent issue of an Engli:h motor journall. Passers-by stopped to lock at it, as at the rear the car bore a phacard: For sale. Price $\mathfrak{f x} \times \mathbf{j} 0$. Particulurs from ċriver." It struck one a very original and cheap adrertiement. The idea has evidently caught on, as several cars have been met in. London recently bea ing "For sale" placards. In one case, at least the owner expectel to be able to do business fairly quickly, as his placard bore the advice: "Please pay driver" under the words: "Price $£ 600$. Clearly, the idea may develop considerably, and a regular feature of the roads in the future may possibly prove to be the large number of privately-owned cars bearing such legends as: "On sale. A bargain": "No rea. sonable offer refused" ; "To be sold cheap" ; "1920 model," and so on. It is believed that hawking motorcars in public strects is illegal, apart from the circumstance that without any business premises or known residential qualification there must always be some ris's in buying a car f.om roadside vendor.


EASE of handling is comparative. The ocean liner is easy to handle in the open ocean with leagues of water in which to maneuver. But the Silhoutte Five is like the swift white launch darting in and out among the harbor shipping.

It is instantly responsive to the gentlest pressure. The Jordan arrangement of the steering apparatus is a marvel of precise control. The perfect balance of the car, the careful distribution of weight, the length and strength of springs and the delicate suspension all contribute to unerring forward mo-
tion, with no side-sway. In its application of power, the Jordan Silhouette is supreme. Acceleration is not a leap but a swift, plane-like glide. There is no jerking or struggling-the road simply flows past.

Women appreciate the ease and restfulness of driving the Silhouette Five as they appreciate its fashionable lines, its harmonious coloring and its perfect appointments.

They welcome a distinctly fine light car-a five passenger car in which quality has been made the compelling ideal.


Sole Distributors For The Far East

## SHANGHAI MOTORS CORPORATION 14 Canton Road 237 Lungmen Road

## NEW NON-PNEUMATIC TIRE OUT.

## English Inventor Brings Type on Market that Conforms to Road.

The name of Mr. E. JB. Killen is so bound up with the development of what may be called the non-pmematic show absorbing tire, in Fingland, that his views on the subject must necessarily command respect and attention, says a British correspondent. On these grounds his latest tire invention is likely to arouse interest, quite apart from any new principles that it introduces.

The basic idea in the new tire is to afford what is rea!? a eushon tire with at trend that antomatically varies 'is width, and so its area of contact with the road, according to the load.


The Killen solid tire in
cross section

The cross section of the tire is therefore of gable-like shape, as Mr. Killen styles it, and, as explained by the sectional drawing, it is fitted on a wheel rim of such sha:re that a cushion of air is interposed between the rim and the middle part of the tire seating, if one may use what in this case is rather a contradictory expression. The sectional drawing, however, will explain the point.

The gable-like outer circumference of the tire when brought into road contact changes its gable-like shape, and becomes more or less flat in cross section. To some extent this flattening out may be assisted by the shape of the tire section, but in the main it is due to the fact that the tire at the central part of its inner circumference is left unsupported except by the air in the chamber formed by the wheel rim. Thus, when the tire is pressed by the weioht of the rehicle, the rubber of the tread tends to How into iniair chamber, as indicated by the dotted lines in the sectional drowing. and owing to this deformation the tread at it: center tends to cave inwards, and consequently becomes correspondingly flattened. The greater the weight, the greater this tendenc:

The gealde-like shape of the tread lend. itself (o) h. 11 :
 to constitute a form of non-skid tread, and the non-skid pio.

 dicated in the dawing, or by - witahle (avitien like them: :
 itself to a divieible trpe of wheal. Which ah ould meke ate fitting and removal relatively easy, although Mr. Killen does not necesmat? limit himself to any paticular form if whel. The tire is preferably fitted to its wheel so that the air space remains as an air-tight chamber during the life of the tire,

## THEY'RE STRICT IN SOUTH AMERICA.

## Getting a Driver's License Means Medical and Mechanical Proficiency.

In view of the constant agitation in China and elsewherein the Orient that greater care should be taken in the granting of drivers' licenses both to motor owners and chauffeurs, the procedure which is prevalent in most of the Republics of South America is of especial interest.

While the system is cumbersome, it yet contains several items which might with advantage be adopted in this country. Here is a description of the Buenos Aires system. which is typical :-

First, it is 'necessary to obtain three photographs of passport size and a form at the Traffic Office. Next comesa visit to the other side of the town, to the Municipal Offices, where a complete set of finger-prints will be taken, and a very full description of the applicant, his wife, his children, with their ages and sex, his parents' names and ages, and full particulars of his business.

About a week later-i.e., when a sufficient batch of applications has been received-a visit will be ordered to the Assistenzia Publica (Infirmary), where a strict medical examination takes place, one's heart and eyesight receiving special attention. A few days later comes a visit to the driving testers. Here an examination is held into theoretical questions, and applicants have to satisfy the examiners that they are capable of executing all "running repairs." Next comes the driving test, which is severe, and the passing of which only entitles the applicant to drive cars of the type on which he was tested.

Returning to the Traffic Office, an examination is held on the subject of the traffic laws and street routine.

In due course a libreta (license) arrives. This is a neat booklet, slightly larger than the English license. It contains a photograph, particulars as to age, complexion, estado (married or single), address, together with a note of the car on which the test was passed, and the particulars of the car wheh the driver is theroby antlocrized to drive. Then follows a reprint of the traffic law, with complete instruction in such matters as negotiating street corners, when the hom should be sounded, etc.

Minor infringements of the law are dealt with by an aticial at the Tratice (iffice, who morks to a schedule of punishments, e.g., allowing the exhaust to "smoke" is punishable by an endorsement of license for first offence, "ith graduated dines for releated offences.

Tratic in contulled lis a special staft of police, who are armed, and many of whom are mounted on motor-cycles. They make frequent inspection of licenses, so that one is calledi upon to produce one's license, say, once a month.
and the parts of the inner base where it bears at each side are preferably made practically unstretchable and flat in cross section.

## Service

does not exist in mere talk but in actual service rendered.

We believe that our service is the best in the Far East.

Our best recommendation is a visit to our work shops.

## CHINA MOTORS,

 I/IMITED.STAR GARAGE EASTERN GARAGE
Main Showroom
Star Garage, 125 Bubbling Well, Shanghai.

## AIR CURRENTS

Frances Lee, who is said to have been the only Chinese aviatrix, was killed at Redwood ('ity, ('ahlifonia, on October 2i, when her plane got beyond control and washed to the earth. Iviator 'comer, who accompanied her, was als, killed.

Fighty ships are now carreing passengers and freight across the English Channel. The Handley-Paige company added several gigantic planes to their service recenstly. The passenger service through the air is becoming more popular than the transportation offered by the Channel boats. A man may breakfast in Lendon, lunch in Paris, and lee back in London in time for dinner, if he tratels the air lanes.

The Hotel Majestic is the first New York hotel roof to appeal to airplanes with advertising. Ons the roof garden a huge sign painted white on black background faces the skies, giving the hotel name and welcoming airplane passengers.

Seventeen students have been graduated from the Ralph C. Diggins flying school at Ashburn field, Chicago, this summer. These "flying kaydets" have flomn their "pilot's tests:" have been officially indorsed by James S. Steven's, representing the Aero Club of Illinois, and have been issued pilots' licenses. Two women are among the graduates. Also Wroo Wing Fon, a geutleman from China, and Procepio Laurel, a native of the Philippine islands.
I. C. Brand, president of the Title Guaranty \& Trust Company of Los Angeles, is the owner of a $\$ 20,000$ plane which he will use for week end trips between Los Angeles and his summer home in the Iosemite. The plane is patterned somewhat after the Le Pere and was built at Venice, Cal., under the direction of H. H. Waterman. It is kicked along the air lanes by a Liberty. The fuselage is luxuriously furnished, one of the unique features being an ice box. Gilbert H. Budwig, ex-civilian flying instructor at March field, is the pilot.

Advertising ingenuity found a new form of expression recently when an airplane, starting on a sensational trip from Calcutta, India, to points in Australia, was painted with the "copy" of several internationally known advertisers. The ads of a motor car, lubricating oil, and an
automobile tire were emblazoned on the planes. The names were recognizable even after the machine had ascended to a height of 4,000 feet.

The "Evening Sun," evening edition of the "Baltimore Sun," has purchased an airplane for regular use by its reporters and photographers in covering "rush" stories developing at distant points not readily accessible by ordinary routes, due to the geographical division of Maryland by Chesapeake Bay. It is expected especially to aid quick reports of happenings on the eastern shore of the State.

Canada has shown admirable foresight in creating an air board which governs both governmental and civil aeronautical activities. This board has already started in to apply air regulations of 1920 , and from the report of their activities in regard to the violations of its regulations it would seem that they are accomplishing much to the end of eliminating all ill advised commercial activities. The entire country is being mapped by the board. All governmental air stations will be made available as commercial stations and will be licensed as such in the regular way. Licenses are also issued to pilots.

Daily aerial passenger service between Memphis, and New Orleans started in September, according to an announcement of B. C. Wood, general manage of the Wood Aerial Transportation Co., a new concern in Memphis. Two planes carrying six passengers each and $1,000 \mathrm{lb}$. of freight were placed in service.

A leaflet giving full information, regarding Air-Mais Services by which postal packets can now be sent from the United Kingdom to places abroad may be obtained now on application at any head or branch post office. Every packet intended for transmission by Air Mail should bear in the top left-hand corner a special blue label bearing the words "By Air Mail." Labels may be obtained free of charge at any head or branch Post Oftce, or on written application to the Secretary, General Post Office, London, E. C. 1. Packeta intended for transmissionl by Air Mail to Paris should no longer be sont under cover to the Postmaster of Croydon.

The world's largest dirigible, the R-38, which the British Air Ministry is building for the United States, will be ready for trial flight late in this month. The ship is 694 ft . long and her six engines have $1950 \mathrm{~h} . \mathrm{p}$.

## Stop Buying so Much Gas!



## The Overland Sedan

## Costs by the Month - Saves by the Mile

WHEN gasoline began to go up four years ago, word went out to Overland designers that Overland owners must-be protected, and the price of gasoline must be brought downbut not at the price of comfort! Get that, for that was the crux of the problem.
The designers of the Overland have Done the Thing That Couldn't Be Done !-by creating that marvel of mechanism, the new Suspension Triplex Spring, permitting the use of light alloy steels for economy, and acting as a pneumatic buffer between the road and you!

It cost $\$ 6,000,000$ to get ready to incorporate these remarkable improvements into the new Overland car. And the Overland car was a great car even before these improvements were initiated and adopted.
So it seems a fair conclusion: That an institution that will voluntarily change over one of the greatest automobile plants in the world, in order to reduce the gasoline bills of Overland owners, justifies the past, the future, and the immediate confidence of the Motoring Public the World over.

[^45]

## The Economy CAR

# THE CENTRAL GARAGE COMPANY 

 Exclusive Agents for Central China'Phone C. 3809

## MULFORD'S PAIGE CLIMBING PIKES PEAK.








## SAN FRANCISCO HAS BEST GAS.

## U.S. Bureau of Mines Report Shows Grades in Different Cities,

The Bear cimate of gasoline to be secured t day in the Enited itotes in sold in San Prameisco, acombling to a 11 port inst icsalt! by th" Burean of Mines as a result of it-mid-summer surver of motor gis. line. Seven dities trew visited in the search for simmper for the te at and sil samples were vecured. I'ractically every sample showed ar rise in the boiling point, the grateat deterionation being in the gas lime sectured in New Orloms, which showed an increase of :3 degrees.

Two muples wice fomb jositively to be adulterateal with kerwens, the hurem declared in its repme and fows other samples have ead point- about fis degrees Fahenheit, Which indicates "rery callens refining, if not actual adulterations.

The average boiling point of the 82 samples was found
 test conducted in April, 1919, and 264 degrees in the mid.
 sents the usual seasonal change in quality, and is normal, and bat in due 1k the samples found to contain keromene.
"These (wo factors, howerer," it is datard, "are not sufticent to acesunt for the entios bise in bivilig point. The remainder is probably due to the increan in demand tor motor fuel orer parioun sears. To obtainsulticient gesoline to sulply this demmat, it hatibevitently beon necessary i. the refiners to cut deeper into the crude oil, thus adding somewhat to the amount of hioh boiling materian marketed as gasoline

The cille from which test sample: wes: acelled. in tire order of their gatity, were: Su Framioco, hoiling print

 (ity, 2rem.

## U. S. MOTOR EXPORT METHODS.

## British Bureau Shows Service Givery to Gain Present Status,

The bollowing notes of American procedure in developing dyult thade in moter cans have reached the Department of Oroseas Thade, yays a recent bulletin of that atii., of the Britisl) (ionermment. The method appears to 1.. as. Fr.llows:

Fihit a "Thade Investigator" artives who will take :tork of the gencial situation and the standing and activity If the bantur firms, and will deride on the firm calculated (1) 11 the the levt :ances. of an agence. The agent is then
 vell :my definite munber of cars within a given period, he fime binself oo tied down and so much pressure exerted on him by correspondence, advertising matter, etc., that it is im.onible for him to avoid taking the business seriously, and doing his best with it. Everything, too, in the conduct of the business-correspondence, executing orders, shipping, the provision of spare parts and the supply of rutable forms of advertisement-is done in a way to atimulate business and make the work as interesting as possible.

The "Trade Invesigator" is generally a well-chosen man alert, keen and vigorous, and with him rests the responsibility of discovering fresh openings for trade, and of selecting and appointing suitable agents. When this has been done, the place is visited shortly afterwards by the Company's Salesman" and later on by the Company's "Technical Man." The latter's functions are to see that the supply of spares and other items of service and maintenance of cars are properly looked after.

The above orgmization is responsible for the fact that in most overseas markets at the present time 90 percent of recent importations have been American. Notwithstanding this excellent business organization the American cars do not always suit every type of customer, and there is a widespread opinion, not only within the Empire but also in certain markets overseas, that as soon as British firms are in a better losition to execute orders people having experience of American cars will be only too ready to replace them by better finished British models where the extra cost can be affcrded. It is desirable, however, for British firms undertaking export trade to treat the matter serionsly and to keep before them the salient features of American business methods by which alone customers can be satisfied and agents inspired to do the best for their manufacturers.

## MEXICAN OIL EXPORTS INCREASE.

Mexican oil shipments during July totalled 12,696,274 barrels as compared with $10,574,395$ in June and 11,200,124 in May, the previous record.


Special Heavy Duty Inner Tubes
Universal Size fit. wither :30 $\times 3$ on

 Price ench. TIs. 3.25 All sizes at proportional prices.

Also a Complete line of accessories at lowest u. S. prices


## MONTGOMERY, WARD \& CO.

head office for the far east.
NATIONAL Y. M. C A. BUILDING, 20 MUSEUM ROAD
Established 1872. SHANGHAI. Capital G. $\$ 100,000,000$

## THIS CARBURETOR USES KEROSENE.

Swedish Engineer Perfects Instrument for Passenger Cars.

While ketosene bas been extensively used as a fuel on motor boate and for motor tractors, it is seldom employed for passenger cars, for the reason that the load on the passenger automobile vanies a great deal, and this makes it difficult to properly vaporize the kerosene and distribute the charge under all conditions. A kerosene carburetor, which is said to have given satisfactory


The Kjellberg kerosene carburetor in diagrammatic cross section: Kcy: A, cxhaust heater; B. mixiny chamber; (', connertiny pipe; $D$, main air inlet to kerosene carburetor; $F$, gasoline carburetor; $H 1, H 2$, exhaust inlet and outlet of heater: J, heuter twbe of copper; L, Hout chamber; $O$, flange connection of gasoline carburetor; $P$, air valve supplying additional air to fuel mixture after it has passed through the heater; $Q$, throttle valve; T. supplementury air valve serving to maintain mixture proportion constant; $S, S$, fuel change over valve; li. inlet manifolr.
results in automobile service, has been invented by C. F. G. Kjellberg; a Swedish engineer. Mr. Kjellberg kegan his experiments in the use of kerosene as far. back as 1906, when he installed a Thornycroft motor in a boat. He then observed that when kerosene is cnce thoroughly vaporized, it can remain in contact with cold air for a long time without condensing. The new carburetor is based on this principle.

There are two characteristic features to the Kjellberg carburetor. The kerosene, in the first place, is mixed with only a portion of the air required for combustion and the mixture is then heated by exhaust heat. Further on toward the inlet valves the extra air is added. Then, a separate gasoline carburetor is used for starting and the gasoline and kerosene carburetors are connected to opposite sides of a T in which there is a "change-over" valve.

The carburetor comprises a heater A in the form of a cast iron chamber connected between the motor and the exhaust pipe. Inside the heating chamber there is a copper pipe with two bends, which is secured at one end to the venturi outlet and at the other to the mixing chamber through a short length of flanged pipe. The kerosene nozzle is secured to the float chamber which is provided with a strainer pire for the kerosene and an air intake pipe:

The mixing chamber is connected to the inlet pipe R. On the opposite side from the mixing chamber is
mounted an ordinary gasoline carburetor. This gasoline carburetor, therefore, occupies approximately the same position ass one secured directly to the inlet pipe, only that it is a little lower. The mixing chamber is also provided with an automatic valve P for supplementary åir, a barrel type throttle valve $B$ for the gas, the change-over valve S for changing from one fuel to the otiner, and a small valve $T$ for external air.

The barrel valve for changing from one fuel to another permits of running either on gasoline or kerosene. When the kerosene carburetor is in use, some air enters the intake pipe through the air inlet adjacent to the kerosene float chamber and passes with kerosene from the scray, nozzle through the hot pipe and through the connecting pipe to the mixing chamber, where air is added by the automatic valve. Then the mixture passes through the throttle into the change-over valve chamber, where the extra air is added by the small valve $T$, and thence up the inlet pipe to the cylinders.

## MOTORS SEATTLE'S BIGGEST BET.

## City Distributes One Hundred Million Dollars Worth a Year.

In excess of $\$ 100,000,000$ a year is spent in Seattle and the trade territory it scres, for automobiles, fuel for then and accesories. This was the information developed in a survey recently completed by the Seattle Chamber of Com merce and Commercial Chub; On a basis of this figure the cutomobile industry is to-day the greatest single branch of S'attle's commercial activity.

Notwithstanding some unfavorable months experienceit by the automobile trade and the severe gasoline shortage that continued during the best part of the motoring seasoin, the survey shows that during the year just ended Seattle firms have invaded new territory and the city has become the distributing center and agency point fo: ()egon, Idaho, Montana, Washington and Maskia for virtually all standard makes of automobiles, trucks and for accesscry firms.

Gasoline purchased by Seattle alone during the last vear was valued at $\$ 18,870,000$, while the oil used for lubrication of motor-driven vehicles in the city was worth $\$ 2,780,000$. Nore money was spent for gasoline and oil in the: year ended Jane 3: ), 1520, than in any previous year in the history of the city.

The wurver also shows that Seattle fims last year manufactured automobile paits to the value of $\$ 1,150,000$.

## The 1920-21 Models <br> 

The Best Known Car on the World's Market Today 8 CYLINDERS 18 H.P. 8 CYLTNDERS- 12 H.P. 4 CYLINDERS- 10 H.P.


THE 8-CYLINDER is the highest type of chassis made and is particularly adapted to the construction of luxurious bodies to meet the requirements of those who demand the best. The motor is high powered, absolutely silent and vibrationjess.
THE 10 H.P. machine is called the industrial car as it is most suitable for Merchants and Doctors-economical to operate, light on tires and very simple to handle.

## Confort - Élégance

Éclairage électrique - Démarrage automatíque Roues détachables

For full particulars apply to Mr. Philippe Osterberger

## GRAND GARAGE FRANCAIS

## Exclusive Agents for China

## NOW TO CALCULATE HORSEPOWER.

## Here is an Explanation that is Simple and Easily Understood.

Calculating the horsepower of a gasoline engine is a simple matter to the atomotive engineer but the layman often nods over a complicated and techmal explanation and finishes it with even moro confusion in his mind than before. Several inquiries have been mado within recent month to THE ORILNTLIL MOTOR regarding methods of determining horsepower and various references quoted but the explanation give below, taken from "The Gasoline Automobile," is frobably the most simple one yet and as such is offered to the readers of this publication:
"The indicated horsepower of a single cylinder, fourstroke engine is equal to the mean effective pressure, $P$, acting thronghout the working stroke, times the area of the $f$ iston, A , in square inches, times one-quarter the piston speed, S, divided by 33,000 , thus :

$$
\text { b. h. p. } \frac{\text { PAS }}{33,000 \mathrm{X} 4}
$$

"Multiplying this by the number of cylinder, N , gives the indicated horse-power for an engine of the given number of cylinders, and further-multiplying by the mechanical efficiency of the engine, E, gives the brake horseqower.
"Tharefore, the complete equation for brake horsepower reads:

$$
\text { b. h.p. equal } \frac{\text { PASNE }}{33,000 \mathrm{X} 4}
$$

"The S. A. E. formula assumes that all motor car engines will deliver or should deliver their rated power at a piston sqreed of 1,000 f.t. per minute; that the mean effective pressure in such engine cylinder will average 90

Ihs. per square inch. ; and that the mochanical efficiency will average 75 percent.
"Substituting these values in the above brake horsepower equation, and substituting for A its equivalent, 0.7854 D 2 , the equation reads :
b. h. p. equal
$90 \mathrm{X} 0.7854 \mathrm{D} 2 \mathrm{x} 1000 \times \mathrm{Nx} 0.75$
$33,000 \mathrm{X} 4$
and combining the numercial values it reduces to: D2N
b. h. p. equal $\frac{}{2.489}$
"To make it simpler, the denominator has been changed to 2.5 without materially changing the results.
"The formula can be simplified, however, for ordinary use by considering the number of cylinders; thus for the usual four-, six-, and eight-cylinder engines it becomes:
$1.6 \mathrm{D}^{2}=\mathrm{hp}$. for all four-cylinder motors.
$2.4 \mathrm{D}^{2}=\mathrm{hp}$. for all six-cylinder motors.
$3.2 \mathrm{D}^{2}=\mathrm{hp}$. for all eight-cylinder motors.
$4.8 \mathrm{D}^{2}=\mathrm{hp}$. for all twelve-cylinder motors.
"The S. A. E. formula comes very close to the actual horsepower delivered by most automobile engines at the piston speed of $1,000 \mathrm{ft}$. per minute. However, at the present time, most of the engines will deliver the maximum power at speeds higher than this, usually around $1,500 \mathrm{ft}$. per minute. As a result, the power which the engines are capable of delivering is greater than that given by the S. A. E. formula. The formula will serve, however, as a means of comparing engines on a uniform basis."

## UPSON WILL BUILD DIRIGIBLES.

## American Air Engineer Forming New Company,

Ralph H. Upson, holder of the Gordon-Bonnett international balloon race trophy, and captain of the American team in the intemational races held at Birmingham, Ala., October 23, sovered his: connestion with the Goodyem Tire and Rubber Co. October 1. For several years he has been chief acronatical engineer of the (ioctyear and leavels to join at company now foming, with New York and Detroit capital financing it, to build and operate dirigibles for commercial traffic in America.

The new company is expected to be organized about the first of the year, when what is called an entirely new idea in the development of lightor than air caft will be attempted. Tpson is quoted as saring he helieves the com-
ing and successful dirigiblê will be of the rigid type, though radically different from the Zeppelin, and he also is of the opinion that dirigible navigation is still in its infancy. He recently returned from a three months observation of aerial navigation methoda and Zeppelin development and construction in Europe.

Upson declined to comment on recent reports cabled from Europe that the Zeppelin works would be removed to the United States with the backing of American capital.

The resignation of several Goodrich officials also is said to be impending. Included in those mentioned as about to retire are A. B. Jones, vice-president; George Perks, director of engineering, and Chief Auditor Muray.

## A Minute Lost May Mean The Complete Destruction of Your Property

$\mathbf{W}^{\text {ITH }}$ property values greater than ever before, it is your duty, and every man's, to have at hand the means of killing a small fire at its start. The loss of a minute may mean a conflagration which will involve a total property loss. It may be your home, your factory, business office, your garage, your motor car.

The JOHNS-MANVILLE FIRE EXTINGUISHER is the only extinguisher that is discharged accurately and continuously in either of two ways. If the fire s accessible, pump it as with ordinary extinguishers, but if hard to get at or if the operator is in cramped quarters, the stream can be discharged by air pressure, allowing the extinguisher to be aimed as easily as the nozzle of a garden hose.

Is al o an essential part of your car's equipment.
Ask your garage man or dealer to demonstrate one.

## Can be operated by anybody, in any position, anywhere. <br> Johns-Manville Automotive Equipment

Look for the lever controlling the stream


## The KOSTERI COMPANTY

San Francisco, California,

SINGAPORE
SOERABAYA
COLOMBO

Exclusive Representatives for the Orient.
Head Office for China; 12 Nanking Road, Shanghai.
Complete Stocks Maintained in Shanghai.

## "AUTO LAUNDRIES" NOW STARTING.

Pacific Coast Motor Ventures Have Proven a Success.



Capitalization of spare ground into "into lanadries" has now hecome the rogle with motor dealers on the Parinic Const of the Cuited states and the ide:a hom mest with satisfactory monetary and cther sulecers.

As one of the branche of the service department of the motor trade is oiling and greasing, an item of highest importance to the individual motorist, this has been singled out and made a seperate business. Oiling and greasing rackas illustrated herewith, which loom up invitingly lafom the passing motorists, are heing employed and are beconing more and more popular. It is aloo a mean- of cocuring additional profits to dealers and garages.

Congestion in gatages can he relievel he the huilding of the racks or trestles for the lubricating of cars. Located on open "paces these rackis fom an additimal adratisement for the work of the dealer or the garage and drew the attention of the motor owner to setricing. Which is eeld masen otherwise.
 advertising compaign to educate the motorists to it and new they are reaping the pronts show he the of eright.



Advertising hus been usel to mutie these Sedttle lubricutiny ruclis arcue the uttention ofepassing motorists
 we wouldn't have been stuck here like this"

## The Auto Palace Co.

 (British)
## PRACIICAL MOTOR ENGINEERS

Telephone West 465
SHANGHAI
362 Avenue Joffre

There is no other business where a life-long experience is so essential as the overhauling and repairing of automobiles and internal combustion engines. Every motorist should make a point of satisfying himself that the people with whom he contemplates entrusting his car are-

## EXPERTS

 All our work is estimated on before a start is made. All work under the constant supervision and help of an English qualified Mechanic-and Ignition andiCarburation work executed by him personally: Cars renovated and painted with English l'antsand V'arnishes.

$$
\begin{aligned}
& \text { Sole Agents: Renault Cars and Trucks. } \\
& \text { Michelin Tyres, Straight Side and Clincher Types. }
\end{aligned}
$$

Telephone West No. 465.

## U. S. TRUCK LINES SUCCEED.

Many Railroads Utilizing Motor Freighters for Short Hauls.

1 mell factor has hen injected into bie busimess of trandontation withon the fast year or two that memands recognition. It is of sufficient importance, also, to cause
 tion" will find a plate in dicticmaries of the futme

The business of transporting merchandiec ly motor forks: exer anything more than purdy whan areas is the outcome fexigencice aising colt of the war, and aflex-thewar conditions, and of the inability of the railroads to propery care for the husinces offeted. So far as really long hauls are concemod, the shipper of gends las no atternative, for, cubviously, there is no choice but to use the railroad. On shenter hauls, however, it has heen found that the motor truck can much better serve the shipper ; can make deliveries more promptly, and at a cost, taking all the elements into consideration, that compares favorably with rail freight or expees charges.

Truckportation as a business is altogether too young to have established any hard and fact principle goveming its eoncmic operation. It is generally conceded that its wratest sphere of usefulness is civer distances up to about a hundred miles, though there are companies in the fiela doing lusiness on runs many times that distance, notably the Goodrear Tinc and Rubler Co., cperating regular motor runs between Akron, Ohio, and New England cities.

Although many lines of freight motor trucks now in megular service in the U. S. are operating practically parallel with the railroads, the new business can hardly be called competitive with these older camier lines. It is generally held that a railroad does not begin to earn profit in the handling of a freight car till it has been havided a distance of 40 to 60 miles; indeed, some authorities place the distance as high as 80 miles. For this reason, the railread companies offer no serious objection to the apparent comqretition, and are glad to be rid of annoring short haul business. In appreciation of the value of the motor truck as a relief measune, several railroad companies are operating truckportation lines of their awn for short distances out of their congested terminals, a:s, notably, the Sintas Fe, the Central Railroad of New Jerses, the Lehigh Valley, and cthers. The American Railway Expness Co., also, in competition with its cwn service, has inaugurated a direct line of motor trucks from Nicw York to Newark and other nearby New Jersey cities.

Like all cther lines of Imerican industry in their early stages of develcpment, the business of truckportation is, at fresent, in an entisely unorganized, unco-ordinated condition. There is no order or sritem to its methods of transacting business-each separate company going its own way, quite independent of what cthers are doing. The business is, however, very gradually becoming systematized
thermah the offorts of the National Automobile Chamber of Commerce and its Notor Truck Committee. This agimization, thongh the offorts of its Committee Secretaly, F. W. Femm, is slowly langing ordor out of the chaos of the begimings of truckportation.

Thore are practically 800,000 commercial motor valicles registesed in the United States and approximately 600 different Jincs of public trucking companies. There are 20 lines oferating out of Baltimere and Washingtcm. In California there are 150. One of the magazines in New Fork devoted to transportation carries advertisements of no less 138 different trucking companies operating out of that city ; to Boston, Albany, Philadelphia, as well as to a multitude of nearer points. It would be folly to try to enumerate them. Their number changes every day. The proces of elimination is going on and the fittest will survive, for the industry calls for experience, good judgment and carital to make it successful-and by no means all the entrants to the field possoss these qualifications.

Although truckportation, occupying as it does the s.treets an 1 highways in the conduct of its business, should propely be classed as a public utility, its status, as such, has by no means been established. Few States have recognized its existence as a public utility and the companies have been permitted to operate quite unhampened by regulation. In Califcrnia, however, their business has been pilaced under the sulferision and semi-regulation of the State Railroad Commission, in that public trucking companies anle olliged to abtain a permit to do business from the Commission. This situation was brought about by the antagcnism that developed on the part of the Southern Pacific Railroad to the operation of certain competing lines -sn antagonism that las since been withdrawn for reason above stated.

Nebraska is the only State, according to recent information, that has taken the business of transportation under its wing, to be treated exactly as other public utilities are treated. The Nebraskia Railroad Commission admits, howerer, that it is an expriment, and that the methods <f regulation matave to be modified in many ways-or regulation stoped altogether. This is the only State, toce where rates of chango for sertice have been preseribed -this feature, also, being admittedly an experiment.

There is no more uniformity in the schedule of charges for antice mate liy public trucking companies than there is in their methods if operation. It has frequently been stated that, as an arolage, this charge amounts to one cent fre hondredtreight per mile. This, however, is little more than a figure of speech, for the rates charged by different companies vary widely from it, as will be seen by the rates quoted on page 92.
(Continued on Page 92)


## LET US BUILD YOUR TRUCK BODIES

As we Own and Operate the largest Motor Truck Fleet in China it follows that our Body Building Facilities are the best.

Sole Agents for GARFORD and FEDERAL Trucks
Chassis in stock in any capacity

## THE CHINA GARAGE COMPANY

TRUCKS \& TRUCKING OUR SPECIAL LINE
21 Foochow Road.
SHANGHAI.
Phone C. 2403.

## FEDERAL

$31 / 2$ TON
TRUCK


## HOW BARNUM WOULD HAVE LIKED THIS!



A freath cal with theo engines made in the allomotire depertiment of thr . Imericen foreess oll the lihillt for an "rmen circus lield at Coblema..

Many Air Projects in U. S.<br>

semgers and 100 poundo of baggage to a passemger. The
 pasengers and it will take abs ut nine m:mothe before they com law butt. It is plemed that the mein offere of tha;
 the pancigal cities of the exmely will be en the bonte of theo airship limes the monstere ship will sat lend in w!y citien but will make "through trips." It is to bo bailt of steel rather than almmimu and with girders supporting the
 sent out legading the time al whish it will plos over the city. Then ath amplane with six or cight patagern will rise to the proper altitude and circle over the city until the lige ditigible amship stats op. The aiplane witl then come to rest on the back of the hig gens ship, the patengers will descend in an elevator t:) the cabin. Iny premgers Wishing to alight in that city will be taken off in a similar manner by aimpane. The engincers sex that this methot of transer is absolutely safe and practioble.

It has cost tho matreede of this eomery $\$ 1.50,000$ per mile capitalization, and the engineers working in co-empaltion with the amy air suvics say that rigit :imphe troms-
 service for $\$ 10,000$ per mile of rad. The initiol capitaliza-


While tramentation of paronger and sxpere is the?

 apectial butan of actial phetegrap hy for use in hayg ont
 for :treet salw:? © $n$-thetion of for taking pictmes of estatcos. 'There is all imamediate demend fer the arvices of such a bureat.
 town in the combly to hate wiretese commonicotion amble


Phis corviee, it is argued, with give the force of a ramen Won! we vel? mesches which ean he wont mone at length and at mate: conresponding to the rates now charged by the axtimg tekphoc and tekgaph compatice. Henry Porl, How hath the ativit! if che of his engincers, a Mr. Maya, is pondoring on this coloseal projact, in cor.junction with somer if the I ackend angincets who were connected with the air wive dming the ".". I gocup of Now lork interest: ate also stating to kot into the posibilities of this air
 ing alomg in valutu puts of the I'nited states. The world Walr proved the necessity of reakoning with avation as a deminant factor in any future war. The air-coast line of this count? ment L. guard and patholled. The Enited Status govemant has found many uses for the airshipalong the Mexican border, to chase the boll-weevil nesting in outlaw cotton fields, for patrol duty in the national fobletw, for use heodegiste and map-makers and prospectors of all souts. (Only two months ago the commanding officer of the C. S. Naval Air Station at Hampton Roads reported to the deputment in 11 arhingen that a series of tests have demenstrated that fishing patrols hy aircraft will prove almont indispensable to tho finhing industry. There seems no limit to the pasibilicie: of the commescial value of avisti n. The reond of tecent rears has fully preven the precticalility of airships as rerageurs of great open spacea of thee air. In America mote than 8,000 flights were Wad: by aitship in 1918, covering thonsands of miles and trenstathg more thom so, oro parengers. In Englan! so,000 bous fore spent in the air by airships in 1918, covering two and a half million miles and carrying thousombs of parengers with no imjury. In (iomany since the armistice a daily airship schedule has been maintined covering 800 miles each day, and carrying 40 passengers each dhy with no injury or intermption. (iermany has enjoyed commetcial airship sorvice since 191:2 with records of more than 140,000 passengers carried, and then used these ships successfully in the war. Just recontly the newspapers carried a "stciy" that two super-Zeppelins are now being built in Germany for American interests for use in the freight and pasenger service between Berlin and San Francisco via New lork. War Department experts on aviation and American business interests have been watching clowely the organization of a great international air corprotation in (remmany. Americim. capital has been invited into this corporation, but the control would remain in Berlin.

It has leen decided, however, to organize a similad international enternise in America, the control of which will remain in American hands. This is, naturally, more in accord with Imoricm business ideas.

The Amorican interests are proposing to establish a great fleet of airehips-as vehicles of international commerce.

## USE JOHNSON'S CAR SAVERS and KEEP YOUR CAR YOUNG



## S. C. JOHNSON \& SONS



Johnson's Hastee - Patch - for tubes, casings and rubber goods of all kinds.


Johnson's Black-Lac --the perfect top dressing. Easy to apply-dries in fifteen minutes-is a permanent, waterproof and inexpensive. Makes a shabby top look like new.

Johnson's Radiator Cement-seals leaks in two to ten minutes-in liquid form easy to use.

Johnson's Stop-Squeak Oil-a wonderful spring and body lubricant. Also takes out
 all squeaks. Reduces the liability of spring breakage.

Johnson's Auto-Lak - enables you to revarnish your car one day and drive it the next.

Johnson's Cleaner - will remove scum and grease and make body, hood and fenders look like new.

Johnson's Prepared Wax-for polishing body, hood and fenders-it preserves the varnish and protects it from the weather.


## HUDFORD GARAGE

(DODGE \& SEYMOUR (China) Ltd.)
Agents for China
89-91 Rue Montauban, Shanghai.

# AMERICAN TIRES IN THE OLD WORLD. 

## Straight Sides Causing Controversy in Europe and England.

In America practically every car is fitt: with what is known as the "straight-sides" tire. ('onsequently, the type has been introlueel $t$, British motorists by American cars which hive been imported: Known under this new nanne, the straight-sidel tire in reality is a well-known frien 1 of our cycling days, namely, the "wired-on" tire. As a result of the ariival of tires of this type, the motorist is faced with a somewhat awkward
 (right) beaded type
problem, in that he must use either American tires-there are few English tires of this type-or fit nsw wheels having rims which will take the beadel-edge tire, and then only is he able to use the majority of Continental or European makes of outer cover.

Obviously, a type of tire which has been adorited so very widely in the United States must sooner or later be considered seriously in relation to the European market, because it is extremely inconvenient to have at one and the same time two entirely different types of tire which are not in any way interchangeable. It seems most prokable that one or other must survive, and the question before the European motorist is which of these two types is the better?

Clearly the Americans prefer the wired-on tire to what they term the "clincher" tire. It should be explained that "clincher" is a generic term in U.S.A., but in England it is the particular name of the tires manufactured by the North British Rubber Co. This is an unfortunate word to be adopted by the U.S.A. makers and users, in the circumstances. As far as the Continent is concerned, the beanded-edge tire holds the field practically unrivalled, the chief examples of the wired-on tire to be found being those imported with American cars.

The difficulty is greatly enhanced by the fact that the tire manufacturers in Europe have an enormous number of very expensive moulds and machines suitable for the pros duction of the beaded-edge tire only, and to scrap all this would cause expense so great that the money would have to be recovered from the purchasers of a new form of tire in one way or another.

Naturally, the claims made by both sides in this highly contorersial mattor err on the side of exaggaration, since there never yet was a merchant who could describe his Wires withont constint use of the superlative.

Briefly, the claims for the wired-on tire are: First, it can be placed on the rim, which in this cass is a specially manufactured rim, without the use of tire levers. This is a claim for immediate consideration by motorists, since the very ilea of using tire levers has become repugnant to the average owner and, on those occasons when necessity forces him to lever on a new and stiff cover, the work entailed is considerable. Moreover, occasions are known where the whole process has had to be repeated because the inner tubo has been nipped at the original attempt. The difficulty of using a tire lever is, nevertheless, much exaggerated ; once become accustomed to tire levers, provided that those levers are long enough and of suitable shape, then the process of replacing even a new outer cover is by no means as formidable as the opponents of this process make believe. With all this, however, it must be conceded that conditions would be better if the need for tire levers could be eliminated altogether.

Another claim for the straight-sided tive is that it is kept in position in the rim, not by pressure of the inflated inner tube, as in the case of the beaded-edge tire, but by the fit of the tire edge on the rim, backed up by the wires carried within the canvas and rubber foundation all round the edge of the tire. The exponents of the wired-on tire allege, quite rightly, that a bolt-valve, of sscurity bolts, are necessary for the beaded-edge cover, and form themselves additional nuisances in that they also may nip the inner tube. Here, again, it would be better to have no bolt-valve, but once accustomed to the manipulation of these parts, the difficulties are not as great as they might appear. That the wired-on tire does stay in position when deflated is proved by bicycle experience, and by racing motor cycle practice.


Deflatert wiret on tire on left-rim edges do not tend to cut cover Right.-Deflated tire on orrlinary rim on which running would. incur serious damage

While on the subject of the deflated tire, it is pointed cut that the very shape of the tire rim for the beaded edge tire ienls to cut the cover if the car runs onl a flat tire, (Continued on Page 86)




Finding it somewhat dusty and inconvenient on the dickey seat of a roadster, " British incentor hus pcolved this wimdshicld and protecting "pron. which lues all the comforts of ritling with the dricer

American Motor Prices Reduced.

(Continued from page 12)

What the future will bring only time can tell. Material prices are dropping but slowly. Bank credits are loosening and with predicted ca-ier money in the next few months, motor car distributers and manufacturers in the United States will again have their support.

But for the present the matter of reductions is the most interesting. Ford prices were reduced ar follows : \$5.5.5 for chassis to $\$ 360$ (all prices unoted in this article will be in $\mathrm{L}^{2}$. S. curency) ; madeter, w.5.5 to 395, with starter $\$ 6.5$ to 46.5 ; toming (ar, 4.57 .5 to 440 , with starter, $\$ 6.50$ to 510 ; coupe $\$ 5.50$ to 74.5 : sedan $\$ 97.5$ to 79.5. These are prices at the factory, however. The prices which will affect the Orient are those from the san Francisco branch of the factory that foilow: taming ("ns, \$769) to \$649.56,
 $\$ 946.32$, plus five percent war tax. The increased costs are due to land freights and other considerations. Ford, in the Orient will be sold at the prevailing san Francisco price plus the actual cost of crating and freight and the dealers will fix exchange for cach shipment so that the buers will not be affected hy the fluctuations.

Whatever elec may be said of Henx? Fords movement at this limes, it is cemain then hes canglit the tide of popular opinion both in the I nited states and chewhele and struck at the opportune time. The excess profits tax paid by his plant will be great! reduced and one olserver calls attention to the fact that Ford has obtained million's of dollars worth of free advertising on the font pages of the leading newspapers and inagazines of the 「nited States for several Weeks, un-
hmable pace: that will more than make up for any loss incurred.
(harts show that motor prices have advanced general conly twele percent during the period from 1914 to 19:20, while clothing in the United States took the jump to 260 percont, hase fumi=hings to e2.5, farm poducta to 144 , and heat and light to 116 .

Reductions have been made in Naxwell and Chalmers luises that amount to arproximately ten percent. BourDavis of Shrevesport makes a similar reduction. Bell announced reduction from $\$ 1595$ to 1495 . The following have also announced lower prices: Chandler. Cleveland, CrowElkhart, Essex, Franklin, Gardier, Hudson, Locomobile, Mercer, Moon, Overland, Iaige, Studebaker, WillysKnight, Velie, Jordan and Maibohm. In the truck field, Bour-Davis, the Patroit, Standard and Stewart have joined the ranks of the price insurgents.

But there is also ancther trend in the motor market. Some manufacturers are increasing the price of thoir cars in face of the decline. The Lexington announced recently an increase of $\$ 100$ on the price of its touring model, the sedan having been advanced by $\$ 200$ on September 1. Other cars that have advanced are: the Haynes, Pierce-Arrow, and Roamer.

For the most part, the average manufacturer in America is sitting tight and waiting for developments: Buick and all General Motors lines have announced that no reduction in price will be made until July 1, 1921, if then, and guarantees to protect its dealers. The National has made a similar annlouncement, followed by the Oakland, the Stutz, the Nash, the Marmon, the Winton and the Packard. Other have remained noncommital with the exception of the Peerless and the Dorris, who say that if anything happens to their product at all it will be a price advance.

The main loser in the entire reduction move will be the United States government through the excess profits tax. It is estimated that the Ford reduction alone will reduce revenue receipts by approximately $\$ 500,000$ a month. The profit tax on mator cars is $\$ 50$ per $\$ 100$. With the normal froduction of the Maxwell-Chalmers, Hudson-Essex, Paige and the Detroit Studebaker lrictory, averaging around $\$ 2,000,000$ a year, on a basis of an average cut of $\$ 150$ a car, the decrease in war tax alcne would be $\$ 1,500,000$. On some of the cars, however, prices were decreased as much as $\$ 250$.

The whole situation is one that is decidedly muddled and the motor owner or prospective purchaser is left to gather his own conclusions. Given a reduction in the cost of materials and labor prices American cars will go down gradually in price over the entire field. If conditions remain the same with high materials and labor, prices, advances may be expected on even the cars which are now reducing.

## The

## Anfus Sncerson 14 H.P. de Luxe CLAIMS THAT HAVE BEEN PROVED.

## STANDARD 4-SEATER <br> Equipment Includes :

Lucas Electric Lighting Set, Lucas Electric Engine Starter, Five Wood-Milne Tires, Five Detachable Corrugated Disc Wheels, Five Lamps, and a luxurious Four-Seater Touring Body of the finest possible workmanship.

It was the actual principles of manufacture as originally outlined to the leaders of the Motor Trade which assured the success of the Angus-Sanderson car from the first. They knew those principles to be fundamentally sound.

But it has been the proving of those principles in actual practice that has crowned its success. Since settled regularity of deliveries has been maintained and the public have had the opportunity of seeing and actually using the Angus-Sanderson car, the claims which were originally made for it have been more than adequately substantiated.

The unanimous opinion of the trade, the press, and the public at home is that the Angus-Sanderson car constitutes the greatest value that money can command.

## Immediate Deliveries

# CENTRAL GARAGE COMPANY 

## Exclusive Agents

2a Jinkee Road.
SHANGHAI.

"Boost for Good Roads in China"


The specifications of the Sheridan Four,., the new motor baby of the General Notors ( $\%$, heve just ben given out. It is equipmed with an overhod valve tap: i engine of $3-11 / 16 \mathrm{in}$. lore by $)_{1}^{\frac{1}{2}} \mathrm{in}$. stroke ( $2 \cdot 2 \mathrm{cu}$ in. piston displacement). The owerhod valve mochanisin is enctored in a removable cover. This engine, as well as the three spoed and reverse transmission, is made by the Northway Motor and Mfs. (o). The chutch is a Howsier I late tye." I Zenith carburetor is fitted, and the electric stisem is of the dut lite two-mit tyen, while ignition is by the Remy system

The reat axte is a mew devign, mamfactmed by anothe anxiliary of the (ienemal Motors (o. The hevel gexe and pinion are made of nickel steal. I torque tubs sumoundm the propeller shaft and takes cand of all triving thmot and torque reaction. This torque tube is ball onlled at its forwatd end, the ball being sumbended lis a wherical homing. which is bolted to the rear of the transmission honsing. One of the feame of construction is the frame, which is provided witl a tubular cross member at the extreme rear, to which are fitted the rear suring rear hangers. The wheelbase is 116 in . The tire cquipment comsists of $3: 3 \times 4 \mathrm{in}$ tires all around, non-skid in the rean and phan trad in front. The price for this car will be in the neighburncot of Gold $\$ 1,800$, it is said.

In addition to the 4 -colinder model there will als, be an 8 -cylinder Sheridan. This will be equipped with an s-erlinder Northway chaine of $3 \frac{1}{2}$ in. bate $1 . y t_{2}^{\prime}$ in stroke. It will heve a 133 in . Wheelban, and will eell in the neigh. bourhood of Go!d $\$ 3,500$.

## FORD TO HAVE NEW MODEL?

Factory Denials Have Not Suppressed Receiving Rumors.

So many reports have leen published regarding the now Ford car, each report bringing denials and evasions, that the mystery rogarding the car has become almost impenetrable. No information is obtainable from Ford offcials regarding the new car and in fact it is denied by those close to Mr. Ford that a new car is planned.

An official of the company has admitted, however, that a new car had beon designed and could be put on the market if such couse was deemed advisable. He qualified his statement, however, by declaring "no conclusion had bew reached regading the binging out of the car and if such decision was mado it would require a year to get into preduction.": Others contend the car could be put on the market in three monthe.

From uncfficial but reliable sources it is learned the body of the new car will be streamline abd will be 14 in . longer than the present model. Th engine is declared to be :ix crlinder with improvements that minimize vibration.

The best alibi offered by Ford cfficials when questioned regarding the new car is "why should we bring out a new car when we cannot make the present model fast enough to supply the demand?" They admit, however, that with Ford facilities and Ford system a new car could be produced if occasion demanded and that in comparatively short time.


5 －ton＂KARRIER＂lorry fitted with steel－lined and reinforced tipping body and twin－screw tipping gear．

REMARKABLE SERVICE UNUSUAL ECONOMY． COMPLETE DEPENDABILITY．

These are three reasons the lorry is supreme． These are three reasons we get repeat orders． Write for Catalogue．

## KARRIER MOTORS，LTD．

THE＂KARRIER＂REDUCES
DELIVERY COSTS AND
INCREASES YOUR TRADING AREA．

Besides giving all the speed you could desire，the operating cost of the＂KARRIER＂is significantly small when compared with that of other lorries．

It meets the demand of the majority and covers the widest field of utility－it is the greatest value on the market to－day．

## KARRIER WORKS，HUDDERSFIELD，ENG．



The Kobe Electric Works，Ltd．
Shanghai Branch
129 North Soochow Road，
Phone N． 2934.

## NOTICE OF CHANGE OF NAME

THE SHANGHAI GARAGE CO．，LTD．

NOTICE is hereby given that official sanction has been obtained to change the name of the above named Company to

## CHINA MOTORS．LIMITED

by which name it will continte lo cary on
busimess at the star Comater ame leastern

（ぶ心ned）I．Vi．IN（＇II．




## DUNLOP'S GREETING TO PRINCE.

Large Electric Sign Part of Welcome to Australia.


Dunlop's Greeting to the Prince of Wales in Melbourne
The Ine!bourne house of the Dumiop Tiubber Co. of Anstralasia carred out the illuminoted disploy of greating to the Prince of Wales on his visit to that cits illustrated below. Some idea of the size and effectixamson of this dis play is to be got from noting that the Prince of Thaless feathers meatured 3uft, high. The pisture, of coure. dons not do justice to the color effect of the various tints of the electric decorative scheme.

## In Paris Speed Is King. <br> (Continued from Page 15)

leard so long ahout Hemry's product, but with the name changel. Despite it oll they continue to run, and perconally I have not yet seen ane broken down.

Tho American is here, but generally he is under a disguise. Thanks to his splendid isolation he cannot call uroo his national association and get a triptych which will allow him to come in with his New York, or Connecticut or Iowa number plates, but has to ship his car to England, get an Engliwh registration, and then, appealing to the Roya! Auton:obile C'lub, secure from that body an International license which will allow him to travel around the Continent. It is not very dignified for the natives of God's own country that their sleek looking Packards and Cadillaes and Simplex cars should have to travel abroad under a borrowed flag.

While the (hamps Elysees itself is full, the show rooms of that ultra-fashionable highway are empty, or at any rate, devoid of anything which can be sold. Perhaps an exception should be made for Delage, who keeps one or two of his beautiful sixes on hand for the plutocratic client from abroad, who must have a car, whatever the cost. If we are to believe the Minister of Finance, cars are selling in Paris like hot cakes at an odd eight thousand pounds

## KEYES BUYS CURTISS BUSINESS.

## Willys Interests Out of Control of Airplane Manufactory.

Acquisition of the control of the Curtiss Aeroplane and Motor Corp. of the United States has been secured by C. M. Keyes, vice-president and chairman of the financial committee of the company, who assumes control of the voting trust and the financial and manufacturing policies of the corporation. In outlining his plans, Keyes says: "I have bought a substantial block of the stock' of "the Curtiss organization from Willys Overland and J. N. Willys' interests and will take control of the voting trust. The control of the finencing and manufacturing policies of the corporation will also come into my hands." Glen H. Curtiss will continue to be head of the engineering division of the corporation and closely identified with Keyes in the management. Changes in the board of directors and officers would be made, it is understood, at a meeting of the board scheduled to be held late last month.
each. Such statements as these seem to be a speciality of the Palais Bourbon, for it was another Minister who, some time ago, got up and declared taxicabs were driven at fifty miles an hour in the streets of Paris-fifty miles an hour for a twin-cylinder cab which was once a Renault.

Meanwhile the streets are full and the silowrooms are empity. Some get over the difficulty by a floral display. Rolls-Royce has an antiquity exhibition which is interesting to the connoisseur and the student, but apt to bewilder the newcomer. A few have found means to get in a sample car or a polished chassis, of either pre or post-war design, but neither car nor chassis can be bought. The Champs Elysées seem to have an irresistible charm for the car manufacturer. Soon it will be easier to say who is not in than who is out of motoring and motordom row. Nearly, every week some new sigaboard goes up, and one may be sure that wherever a ground apartment is hidden by a hoarding, motor salerooms are being prepared behind. Just now we are waiting to see when the calico will be pulled down to display the name Mercédès above the Irincely quarters just by the Etoile. 'The soldiers' relief organization has rofled up its tents, and the encmy of yesterday is coming bick soon, so they say.

London's showroms are paltry in comparison ; those of Brussels are insignificant ; in Rome they are hard to find ; in New York they are huge, noisy stores. The headquaterof the French industay in the ('hamps Wlysées are luxurious and elegant. The Dolage siege pocial, for instance, is at real palace, white the places o! busimess of Hiat and Lorraine-Dietrich, Renault, and Kollner, DabmayBellevillo, and Rolls-Royce, to mention only it fow, aro much more elaborate than places in which cars aro sold in other citios of the world.


## The Cost of Motoring Has Doubled

The fuel which is sold today as gasoline was called distillate a few years ago and stood two grades lower in quality than the gasoline used for motor cars.
Furthermore the price of gasoline has advanced even higher than the quality has depreciated.
There is but one answer to this-elentricity.
More and more the economy and superiority of electrically-drisen platione cars is making itself felt in the motoring world and owner: are looking to them as the solution to the high cost of automobiling:
It's a wise man who puts- his money into at Milburn delectric in this dat and lime.

## Andersen, Meyer \& Co., Ltd.



Main Office - Shanghai
Branches in the principal cities of China.



## NOW IS THE BEST SEASON FOR THE SPORTSMAN!

SOME MAY GOLF<br>SOME CRICKET<br>SOME BASE BALL<br>SOME ROW<br>SOME RIDE

## LET MORE DO MOTORLNG BUT

ALL MEN WILL FIND
THE BEAUTY

CIGARETTE A SATISFYING

## FINISHING TOUCH TO A GLORIOUS DAY OF SPORT

TRY A PACKET AND YOU WILL BE GRATEFUL FOR having followed the suggestion.

SOI.D AT
ALL LEADING TOBACCONISTS.

## U. S. GAS SUPPLY LOW.

Winter Reduction Hoped to Partially Relieve Situation.
Though a dietinet reduction in gasoline rescrves has been reportad for July, the United States Bureau of Jincs in October announsed that there was no cance for alam inamuch as the demand for motor fuel would lessen with the approach of winter. The refinery statistics showed increased production for the seven menthe: lut on July 3 conly 25 days' supply of gasoline was on hand. This slump of gasoline stock went beyond the reduction experience in 1918 when only 27 days' reserves were repionted at refinecies.

Refiners are quite confilent that they can bridge the gall letween demand and surply when motor cars are not ned so extensively particularly during the cold wenther. All records in production were broken in Californiz during July lut the consumpition cutdistanced the output and s.tocks declined. Improved transportation has enabled refiners in Wyoming, Texas and Oklahoma to send heavy shipments to the Pacific C'cast territory.

The average daily output for July, 1920, amounted to 13,6aั8,702 gal., a compared with $11,048,121$ gal. last year. 'Yet the total stock on July 31, 1920, was 413,279,319 gal., as against 514919,358 gal. in 1919.

The Bureau of Foreign and Domestic Commerce reported to-day that the August ex ports of gasoline and naphtha were $58,661,151 \mathrm{gal}$. or double the amount for the corresponding period last year. These products were volued at $\$ 16,093,269$, as compared with $\$ 7,321,882$ for 29,587,503 gal. in August, 1919.

## ITALY HAS HEAVY TAX.

## Socialist Vote Brings World's Record for Motor Levies.

The Italian Pariament, by a Socialist vote, that becomes operative January 1,1921 , imposes what are probably the heaviest taxes upon cars in any country. Two wellknown Italian post-war models will have to pay $15 ; 000$ liras, abrut $\$ 3,000$ gold per annum. This amount is so high that it is dombiful ii many purchasers can be found in Italy for these cars. The 12-hp. Fiat, which cannot by any means be convidered a high-powered car, will be taxed 1243 liras, or, more than G. $\$ 240$. The new 15 -hp. four-cylinder, which is rated at 22 hp . under the Italian taxation scheme, will have to pay G. \$330 in annual taxes, while owners of the new six-cylinder Fiat will be called upon to pay $\$ 940$ annually to the tax gatherer. Motorists and manufacturers generally are up in arms against the new law. Even the Socialists responsible for the measure are showing a certain amount of alarm at the possible consequences of this ill-conceived law.


## FOX GIVES "LINE" ON MOTORS.

## British Commercial Counsellor in China Consults with Manufacturers.

Arangernent- were rasde with the loferthent of Oversers Crade for Mr. H. H Fosx C.M.(;., H.M. (monmercial (sunseflos in Chira, to, vi-it the shlio. : of the Coventry ('hamber of Commeres , os Nertay an I The lats


 to the Secretaly of the (hamber. Jutanes from numa reponte, the irmmai conelules, theres -lum! ! be an mernatime domend for cyeles and motor evede. in (ehinas.

## 2E00 TRAILERS NOW SERVE IN NEW YORK






 includes Syracuse, 120, and Suffolk county, contral 1.aninland. 11-.
 hub sizes to and and all wheal.

NOW A CYCLE TAXI.


cimelif Eit in trais

NEW HISPANO-SUIZA ENTERPRISE.








## WE SPECIALIZE IN SECOND-HAND CARS!

## ARE YOU BUYING OR

 SELLING?

IF BUYING it will pay you to watch our stock of second hands which changes every day.
IF SELLING it will be worth your while to see us before disposing of your car.

## WE HANDLE HIGH GRADE CARS ONLY-NO CHEAP MAKES.

We also have a number of Motor Trucks in various capacities ranging from $1 \frac{1}{2}$ to $3 \frac{1}{2}$ Tons.

# Demonstrations <br> Cheerfully Given <br> <br> \section*{THE AUTO CASTLE} <br> <br> \section*{THE AUTO CASTLE} SHANGHAI <br> Phone C. 402 228 Ave. Joffre 

NEW DEVICE IS TRUCK AUDITOR
Gives Complete Report of a Day's Work of Fleet.

Truck users, ospecially those employing Heets. will readily apmectate the advantages and value of the n.w Omer Itruck Aaditor which hats heon developert the the Ohmer Fare Register (oo. Jnanom, Ohio, mambatimer of


This methine ettacherd to the
densh of "rny truck gives "
printed and complete report
of the day's activities of
the carrier, including date,
drivirs mumber. hour and
mimute of enche start and
stop. Hec milenge. gras and oil consumption, time of loading and unlouding, time motor is
allowed to idle, etc.

[^46]mounted on the dash of a truck and which provides a sem?lete printed report of all details of the day's work: T!? report, condensed in form, is albsolutely untamperab'e and indelible. The instrument affords the truck owner a "merhamical supervision" over his trucks and is really a mechanical cost accountant since it records the expenditures for truck operation-material, time and distance.

The printed report gives a wealth of information. Among othets, it tells, who drove the tminck, date, stant of day': work distance driven, time consumed on each trip, time ide mileage of each trip. Weight of laad, time to load and unlo:d, time out for repairs, how much oil and gasoline wis takes: on, number of trips made, and other information depending upon requirements.

The ithetration shows a report being removed from :he instrument. This report is read from the botton up. The data shown in the varions columns is reading from left to right, mileage, miscellaneous data, month, day, A.M. or I'. M., homr, minute, machine number and driver's number.

Each driver is provided with an identification key, which must be inserted in the instrument before it is possible for

OVERLAND HAS CHINA TEST．

Forty Eight Hour Non－stop Reliability Run Held at Peking．

The first official mentor car test of North（＇hina to prove reliability and endurame was held on November os amf is at P＇eking with an Overland 4 stork model driven by Major （＇yril Patterson．The ear covered a distance of 9f9）miles over roads of all types following a circuit which included the Jade Fountain bratel，l＇in T＇ze Jen，Hes（＇hils Men， and tho summer Palace，thirts－seven laps in all．

The gisoline consumption for the test wase slighty lavis
 A total of one and one－quarter gathons of lulriceatiog oil was used．The motor fuel was donated by the Asiatic Petroleum Company．

The test was conchuded at tlee entrance of the（irand Hotel de Peking at 3 riclork on Novembrer（i），the（as having leen driven continuoully for the 48 hours，with the exception of four hours for refreshment when the engine was left running．The rum was under the direction of the China－American Tradiug Comany，Peking and Tientsin， North China agents for the Overland．

DE PALMA HANGS UP MORE TIME．
Establishes Three New World Dirt Track Records．

Ta！ph de Palma netablichod torea new world recends ，，m an oval dirt track at the State Fair at Syacuse，N．＇．，on September 1 e against one of the fastext field in the c＂untry including（iaston Chevrolet，Eddie（）＇Imme！and Jimmy Murphy



 ！！！\％









 ing in सatsoline thess effected，it i …jal，will fle Hf．．． 1 it the dovice many times over．

THE COMPREHENSIVE POLICY

OF THE

## ALLIANCE ASSURANCE CONPANY，LIMITED <br> （ASSETS OVER £24，000，000）

Affords FULL COVER to Motorists， INCLUDING－

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Collision or other Accident，
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## PROMPT AND LIBERAL SETTLEMENT OF ALL CLAIMS．

dARDINE，MATHESON \＆Co．，Ltd．， ЗHANGMAI，
asb al
TIENTSIN，PEKING，HANKOW，TSINGTAO，

## TSINGTAO HAS ITS ASSOCIATION OF GARAGES.



Members of the Tsingtao

Giuruege Association, at a
dinner recently given in
their honor by Ertwin

Judah, of China Mctors,

Lth., at the Strand

Hutel, Tsingtao

NOW FOR THE ROLLING STORE.

Los Angeles Firm Mounts Grocery on a Motor Truck:

More and mone the motor truck is, expanding the scope of its astivities and wearing its way into the fabric of modern life as a convenient and dependable utilitr. The litest development is a traveling gocery store, a "store at your door," a siat of silpeneddler, as anceived by A. J. Porter of Los Angeles.

Poters iden is now, norel and a distinct de mature from the natal methats: followed in the mats of trade. As fir as greacries are concerned, it will do away with the shorping bag, the housowife's basket, car fares and the wats of time and effort ordinatily necessary to keep the family culuboard plentifully stoked with those ati les so esentiel to its well-ondered shelves. No more will the ledy of the house have to change to her street gown, doll II and trak the missing ingedient to it: lair at the nearest grecer that the man, or mon folks, may be cheered with a well-round meal. Porter's idea will fix all that. Everything to be found in the grocery she can purchase right at lis door-all the fun of shoping without the bother.

This store at four deor conciste of it large boly built "ecording to plans orer which Pater has mulled for some yeas, mounted Mon a one and enc-half-ton Moweland truck. Along the sides of the interior are rows on rows of shelves and compartments. At the front end is a refrigerator of simple size for the proper weservation of butter, egers, cheese and sulth things requiring at cool leatitat. Backing there compantmonte and revched from the cutside are mony other culby holes diselowed by sliding doors.

The whole affair is remarkably ingenious. Every inch of siace is: conserved and an astomeng number of articles can be tucked away in the limited space in an orderly amy
and monner readily and spedily accessible for display or sale. As fixst equipped for trial trips, which start immediately, for the traveling stone has over 350 distinct articles, in fact, practically everything to be found in any: grocery stcre, including in many instanoss several makes or varieties of the most generalliv called for articles.

This outfit will follow a regular house to house route orer as much tenitcuy as can be covered in a day: The first territory to be covened will be the Vermont Square section in Tos Angsles. On. Bridge street, Chase and Porter, of which the designer is a member, had a retail store and warehouse, which will be used as a basis of operations. Here the peambluting glocery will stock up and start on its rounds of calls among the housekeepers. The opening of the stope is: a simple oporation, just the swinging open of the rear doors, letting down the folding steps and sliding ul of the side pancls. Then the fair purchaser has before her all the delights: of making her selection, with the goods spread before her in compact space, in peaceful calm with ro mad mili ef shopers: to jog her ellow or speed her decision, no bundles to maneuver through crowded streets, nor the other irritations that extract the joys from life.

This is believed to be the first time in America tinat a motex trul has ever been used for such a furpose. It is :m inncration that, if successtul, will lead to a fleet of similar caravanceries conducted by the same firm and undoubtedly innovation will spread far and wide over the streets of the land.

Nearly 4 per ent of the worl's cotton in 1920, or 400,000 bales, will roll around the wide world in tires.

# DENNIS VEHICLES 

 are made of Beffer Material-Give Better Service - Cost Less per Ton Mile - and altogether achieve a higher percentage of efficiency over a given period.
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It is owned by many who can afford to pay anything they wish for the things they use.

It is always bought because of its known value and its after economies.

The gasoline consumption is unusually low. The tire mileage is unusually high.
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SHANGHAI

'Phone N. 1951

ROAD SAFETY FOR 'BUSES.
British Inventor Makes 'Phone Attachment to Warn.Drivers of Rear Approaches.

The grey haired and time haggard of "Necessity is the mother of invention," has again come into play with the advent of the motor bus, rubberneck wagon or char-a-banc, which ever is preferred by the reader, by the invention of a 'phone device to warn the driver of cars approaching in


The dotted lines show the connection of the charaulhome with its amplifier in the rear
the rear. The invention comes from England where char-a-bancs are becoming increasingly popular and its working arrangement is illustrated herewith.

The necessity came by reason of the fact that road accidents have increased almost fifty percent in England during the last year and the majority of accidents to vehicles

## IN THE MATTER OF OILING.

## Tires Should Also Have Just Treatment and Changes,

After driving a new car approximately a thousand miles, the wise motorist will draini all the oil out of the engine, give it a thorough cleaning and refill with fresh oil. This operation should be repeated every thousand to fifteen hundred miles service to clean out all particles of metal, grit and sediment that may have accumlated.

Tires deserve similar treatment to preserve their life and enable them to give maximum mileage.

At the end of every 2,500 miles service, a tire should be deflated, dismounted, soapstone and grit removed, and the inside of the casing washed with gasoline. After drying, the inside should be dusted with tale, the tore mounted and the tube charged with fresh air.

During this operation a close inspection should be made of the tread for cuts and fragments of glass; according to Miller tire experts. The rims should be cleaned of rust and painted.
while overtaking commercial trucks and char-a-bancs has been due to the driver being unaware of the approaching motor or vehicle. The new "Charaphone". as it is called gives the driver warning and permits him to guide his "craft" accordingly.

CHEVROLET WINS AT DENVER.

Essex. Takes Second With Studebaker in Fourth Place.

W. A. Coleman in his Chevolet with which he won the DenverPurblo road rucr
IV. A. Coleman, in a (hevolet, won the $\$ 500$ first prize in a twenty car race of 120 miles from Denver t. Pueblo, Sertember 20, in 2:09:40 on a graveled road. His Whe the eighteenth cai to start and the second to reacha the finish line.

Horace Franz, in Essex, Tom Roberts, in Marmon, and Claince Shockloy, in Studelaker, won second, thir! and fourth prizos. Factory Pilot Leo Banks in Revere Special made the fastest time of one-fifieen for the reventrfive miles to Colorado spinge but was wrecked in a ditch about five milos farther on and received a broken leg an! shoulder.

Fifteen other cars starting were Fiat, two Chevrolets, two Mammen, Studelaker, Noremac Special, (iold Bug Special, Hutchin Speciai, 'Templar, two Chalmers, Hasnes, Ander sole and oldmobile. Thonsands of persons and houtreds of cars lined the come. The race attracted cextra coowlis betane it was run on the opening day of the Colorado State Fair at Puelale and it is very likely to be made an anmual (lassic. The event was staged by the 1) onver "Times" and leebos "Star Jomel." Starting cars ome nimute apout roulted in mony spectacolat brobles. Sus
 that \$2, oth in cand frizes, mere thath lime times the :"momb of this year's prizo., has ahomdy bown perveded low a mogent event next soptember.

Beedes winning high preise loom the drivese of the twenty wats that started and fram deakers and motor racime

 thembeing the Predfo Automotive 'Trades' Aswerition,
 tisin and Prutilo I ime' ('lub).




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## American Tires in the Old World.

(Continued from Page 70)

which is not the case when the American type rim is in us. . Nevertheless, it is possible to travel on a deflated beaded edge tire for the limited distance which is generally unavoidable, but without the serious consequences which are said to result; conversely, a cover has been known to become damaged in this process on a detachable rim for a straightedge tire. In the main, though, the straight-sided tire justifies this claim.


Detachable rim shown in section

Above.-more air is possible in wired on type as illustrated.
There is also ancther claim that more air can be put into the tube of a wired-on tire, but whether the amount of extra air is really anything worth having is another matter. It is, however, there, and is a factor in the case, though somewhat offset by the fact that a round section inner tube beds more snugly in a beaded-edge tire than it does against the almost rectangular bass of the straightsided trpe.

On the all-important question of price some exponents of the wired-on tire say that there is no difference, while, again, others say that it is more costly to make. It is claimed, on the other hand, that there are constructional advantages having to do with the direction of the cords or fabric, as the case may be, in ar about the bend at the beed, but this is more a question for the manufacturer to decide than one that will interest the future purchaser whose intercst is chiefly concentrated upon the first cost of the covers and tubes, and thereafter upon the running cost as shown by the durability in service.

Now, it is quite obvious that the chief item in favor of the strajght-sidel $\{$ tire is the fact that it can be removed without the uss of tire levers, but, in order to arcange for this to be dons, some part of the rim mus' bs detachable, and that part is generally the outside edge, although it may be one-half of the rim when the latter is divided circumicurntially.

The two characteristic differences of the opposing types of tire are appapent. It is evident at once that the rims are met interchangeable, as the one for the beaded tre is a solid rim curled up at each edge, but part of the rim for the straight-sidel tire is detachable. Many and varions are the means adopted to secure the detachable flange in


THE FIRST WINNER OF THE GORDON BENNETT EVENT．


Glenn Curtiss beat seven European contenders in 1909 in this primitive machine，capable of waking only tif miless an howr，＂riuning lla fims Gordon Bennett air troplyy
position，sine it is this frart of the rim which must he：re－ moved altogether in order that the tire，wit＇）its deflited tube，may slide on to，or be talion awny from，the sim，and siome tool is necessatry to remor：the rim flange．In some cascs the flange is locld $b_{y}$ a cirde of $m$ all split ath one point，and can be femoved from the lixal rime allow ble circle has been levered from its bed．In othe $\begin{gathered}\text { a } \\ \text { s．ri }\end{gathered}$ of bolts and muts hold the sme to the othor，in y M others a single snap catch．

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 DEALERS IN SLLITS，SATIIMS，CRIPES，PONGEES， EMBROIDERY and GaUZES

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1．Ill kinds of Shot，Changeable，Spotted，Twilled，
老
做 Striped，Checked \＆Gold Brocaded Satins，Silks，介
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The ahowe（imens ate mambatumed at nem 綢 8．
 If bathern amil in a lata rameth．Satme and il：
 5，25．Kiukians Road，Corner of Honan Road，Inj sll．incill．11

## HERE＇S ONE OF THE ESSEX CARS WHICH BROKE THE U．S．TRANS－CONTINETAL RECORD．




ALL THIS FOR G．$\$ 375$ ．

## Peters Car Promises Much For New Model．



 Metor Co：puation，＇I＇，nton，$\therefore$ ．J．（hes of the main mechanical features of the cal is sail $t$ ，$b$ ，a new typs of transmission whill elminte：the usual dutch．The
 ing parts ustally fom in standard cats．The car weighs

 roadster，and is equidqed with l3weh imition，d mountable rims and elsctric lights．

ENGINE NUMBERS OF CANADIAN FORD CARS．

| lear | 1114 |  |
| :---: | :---: | :---: |
| 1913－4 | C－1 | to C－165C0 |
| 191．4－5 | （－16．） 01 | 1．）（－37500 |
| 1915－6 | C－375） 1 | 10 （－T010） |
| 1914－7 | （－Јハハリ） | （1）（－1．2100\％ |
| 1917－8 | C－121001 | to C－170000 |
| 1978－9 | （－17：（\％）1 | t）（－20） |
| 1919）－20 | （－－2） | （1）（－2．503： 4 |

All Cantam Ford engines latic the letter＂（＂）b：fere the motor number．

## CHANGE YOUR SPEEDOMETER WHEN USING CORDS．

Now that many owners are changing over to cord tires the following information given by a tire expert should be of interest．
＇Jany of our customers who formerly have used fabric tires are re－equiphing their cars this season with cords．It inn wamed to me to way them to shage the ge ring of their siedometers，ince the f．ilure to do so would make the reading of the instrument untrue．

The sodemeter，of course，measures milcage by recording the number of revolutions made by the wheels． Most cord tires are oversize ；for example；a cord tire cor－ rest in ling to a falric $3 \cdot 2 \times 3!2$ would be from three－quarters to ons and a quater inches larger from head to bead． This gives the cord tire a circumference longer by about five inchus than that of a fabric．so that while 632 revolutions would make the latter cover a mile，it would cause the former to travel one and one－twentieth miles．In others words，if the speedometer is set for fabric tires，while the ar i－equiped with cords，the spech is o persent greater then the instmment reading．

## AIR SERVICE CLOSE SUCCESSFUL YEAR．

The ond of the firet yeat of the Paris－Londen air service －han：that 2101 thips were made and that 4339 pascengers wore carried with only one fatal accident，which resulted from a poor landing．Freight carried totaled 80 tons．

## DEPENDABILITY

THE FACT THAT YOU ARE DEALING WITH THE CENTRAL GARAGE COMPANY, INSURES

YOU THAT OUR
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AS REPRESENTED AND VALUE FOR YOUR MONEY CENTRAL GARAGE Co.

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IT IS more profitable to insure your car BEFORE
a smash than afterwards. You have bought the most suitable car for your purpose--now take out the most suitable policy to protect that car.

The "YANGTSZE" Policy offers the fullest possible protection and is the most generous to the car owner.

RING UP THE

## YANGTSZE

INSURANCE ASSOCIATION, LTD.
(Shanghai Central 5475) and ask for a prospectus.


Picture on bight shows the before metrending on left in vulcanizer after retreading.
10 years experience with a larse concern in Ameros is hehind own work
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## USING GEASE AND OIL.

The Time and Kind Plays a Large Pari in Proper Maintenance.

Mraximum efficiency and life can be had from an antometile only if the correct lubricants are used at the right time and in ample quantity. So murh depends on hubrication that every owner ought to make a special study of the whljoct. Reiair lills, can be reduced, many avoided altogether, hetter fuel econcmy may be had, less trouble on the road, fower accidents, and in general better and cheaper motoring, if only lubrication is ruperly attended to.

Engine lubrication secms to be the most important motter with most owners, but the rest of the car farts have ti move, but simply because the damage from neglect or oversight may not lie sudden and expensive, owners pay little attention to these parts. There are many parts which run at engine greed which ought to be attended to every day, just as you fill the crank-mase. The basic law of lubrication should be this: Lubricate according to the: $s_{1}$ ced and load. The heavier the load on a part the more careful ons should be that a film of lubricant is constantly maintained. The faster a part runs, the hotter it gets, therefcre the more closely lubrication should be watched. Some parts get hot merely bccause they operate fast, as for example, a transmission bearing; others because they move fast and are heated from an outside source, as a piston which takes the liest of explosion.

The owner should acqaint himself with lubricant values, he should know whens to use cill of different grades, where to use grease and where it will not do. The owner should know the particular lubricants best suited for the different units on his car, and he will not learn this in conversation with a garageman who las lut one brand of lubricants to sell.

The motcrist knows that if he does not fill his crankcase regularly, the bearings kurn, the cylinders become scored and ristons stick. Dirty oil in the engine is like dirty food to a man. It is injurious. In an engine, however, dixty oil merns worn oil-oil used for too long a leviod.

Engine accessories cannot run forever without attention. A learing on the ignition unit, the armature bearings of the lighting generatr and starting motor, must he oiled as specified by the maker. Once erey weck would not be too often. Notice how a locomotive engineer when not at the throttle is usually seen with a leng-spout cil can.

If an owner is not familiar with the actual parts that ought to be lubricated how, when and the sort of lubricant to use hecause the instaction book is not clear on these roints he should go to the service stationi and have someone point out exactly where he should lubricate.

## VEEDOL FLIES TO JAPAN. <br> Italian Aviator Uses Lubricant for Jaunt from Rome.

The completion, on May 28, 1920, of the aiuplane flight from Rome to Tokyo-a distance of 6,750 miles-by Liutenant Masiero, of Italy, proves cnce again the dependability of Veedol, says a recent issue of "Tide Water Torics."

That the use of Veedol played an important part in the success of the undertaking is witnessed by a letter of commendation from Lieutenant Masievo himself, addressed to Yanase and Co., of Tokyo, agents.


The picture on the right shows Lieuteriant Masiero's machine hovering over the field in Tokyo just before landing. A close inspection of the picture on the left hand side shows the Lieutenant himself in the foreground.

It is realized that the modern car is not designed so that every lubricating point can be reached easily, but this is no excuse for neglecting the parts. One must remove the flcorboards to pack universal jcints, to grease clutch bearings and to re-fill grease cups that might be installed in these underneath parts. A universal joint runs at engine sfeed and should never be allowed to run half packed. On some makes of cars clutch thrust bearings or washers must be greased daily, on others not so often. The forward end of the torque member, if thene is one, is usually mupplied with a grease cure and it is there for a purpose It ought in be turned down at least onse a week if not oftener.

Think of such a vital past as a steoring knuckle pin constantly rubling, and so often noglected by the owner? Stearing knuckle pins ought to receive lubricant duty. Oil (apus are often supplicd though high pressure grease lubrication is frequently used. The watk should be done exery day. The best grease is nono too grood. Cheap grease loses its lubricating qualitios in a short timo; it harden like sollat

Transmissions should be oild, never greased. Use at gear oil that sticks to tho gears. 'Tramsmiswion oil loses its "life" therefore the cate should be flushed and we plemished at least once evory six monlhs. 'The rear alo is treated like the transmiswion.

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## The World

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We can supply anything you require in the Electroch Line．

## A VEST POCKET AIRPLANE．



The is small machime built b！l＂French＂irman luas a twin enginer of $16 \mathrm{~h} . \mathrm{p}$ ．and weighs 200 pounds．It lurs been culled the motoreycle of the air．
of the consignee．If，lit one method of transportation， additical expense is made necessay by boxing or crating requirements，this should be taken into consideration．If， by such boxing or crating additional weight is given to the consigment，this also should be noted．IV．J．L．Ban－ ham，traftic mauger of the Otis Elevator Co．，has made some interesting studies of rate comparisons，on mer．．． chandise by rail freight and by motor truck，after taking＇ these items into account．He includes in the freight cost the first class rate，plus 15 c ．per 100 pounds teaming charges from shipper＇s warehouse to freight house，phe 15c．per 100 pounds again teaming charges from freight house to receiver＇s warehcuse，plus 24c．per 100 pounds increased cost of boxing to cover shipment made via rail freight，plus 17c．per 100 pounds increased weight caused by increased boxing．The rate by motor truck，he figures out，covers delivery from shipper＇s warehonse to receiver＇s warehouse．

In orderi to give an approximate comparison of costs to shipper by the three methods of transportation－rail freight，expness and motor truck；the table below is given． In this is taken the first class freight rate now in force on the railroads modified by the adjustments suggested by Mr．Banham．The express rate quoted is in accordance with the award of September 24； 1920 to the American Railway Express Co．by the Interstate Commerce Com－ mission，granting it permission to increase rates $13 \frac{1}{2}$ percent over the rates in force last August．The rates quoted for truck haulage are the best averages obtainable of present charges．

COMPARATIVE CHARGES PER HUNDREDWEIGHT．

| New York to－ | Rail． | Express． | Truck |
| :---: | :---: | :---: | :---: |
| Newark | \＄0．91 | \＄0．97 | \＄0．15 |
| Philadelphia | 1.02 | 1.45 | 0.80 |
| Boston | 1.36 | 1.59 | 1.50 |
| Providence | 1.32 | 1.59 | 1.10 |
| Worcester | 1.31 | 1.59 | 1.50 |
| Wilmington | 1.13 | 1.45 | 1.20 |

We have given enough data to bring out the feat that truckporation is an industry that，in the future，must be

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## Vulcanizing

 Retreading \＆Repairing by the latest methods．
## TIRE SERYICE DEPT． CENTRAL GARAGE

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JUST ARRIVED MOTOR SPECTACLES SHOOTING，AVIATION AND SUN GLASSES司 公 鏡 眼 華中海 上 SHANGHAI OPTICAL Co． P393 NANKING ROAD． PHONE C． 1084
reckoned with in transpertation economics．In its present unorganized，unco－ordinated state；however；any really permanent comparison of it with the older lines of trans－ portation would be like comparing an infant with a giant． But the infant will grow and，as the elimination process continues，an adjunct to our older methods of transporta－ tion will be added to economic life，based on sound prin－ ciples：and the knowledge now being gained in the school of experience．

## AUBURN

MAKES CHINA DEBUT.

New "Beauty
Six Entering
Oriental Motor Field.


The nerl Auburn "Beauty" Si:-a side riew


Front riew Auburn "Beant!" Si.r


Instrinment board and control

One more new face has been added to the ranks of motors represented in China by the addition of the Auburn "Beauty" Six and its kindred models of the same make. The demonstration model arrived in Shanghai early this month for the agents, The Franco-Aciatic Trading Company, and more will follow within a short time.

The new car has a six cylinder motor, $3 \frac{1}{4}$ by $4 \frac{1}{2}$, Remy ignition, starting and lighting system, 120 inch wheelbase, and 33 by 4 tires. It is made in three models as far as erating capacity is concerned, two, four and five, with


Eingine rien of the now . Alburn, showing carbureting system
sedan, touring, and limousine bodies. The new demonstration model is a 5 passenger machine with a blue-black body treatment.

The Auburn is not a new venture in motor car construction but has been on the American market for a number of years and each years models have met with increasing success. It has begun its invasion of the foreign fields within the past two years and reports from Great Britain and the Continent would indicate that it is being met with à most favorable reception.


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## FRENCH MAKER MEETS FORD.

## Price Cut in America Followed by Citroen in France.

('itroen las countered the doop in Ford prices by announcing a decrease of 20 percent in his open models and 2.) lercent in closed car prices. He declares, however, that these reductions will ge into effect only if enough orders to justify them are received within a short period. Prospective purchasers who file orders are informed that they will not be compelled to buy unless the price cuts are made effective. The prevailing impression is that the new prices will continue regardless of the number of orders received.

## BRITISH GAS PRICES UP.

Scotland and Ireland are Also Affected.
Following are the current advanced British retail prices of motor spirit as of late September according to an English mator journal:-No. 1 petrol, 4s. 31 $\frac{1}{2}$ d. ; No. 3, 4s, $1 \frac{1}{2} \mathrm{~d}$. ; ?nd N゙. 13. A. and (3lico National benzole, 3s. 11d. per galion in 2-gallon tins. These prices rule all over England and Wales. In Ireland and Scotland the prices of petrol are $1 \mathrm{~d}_{i}$ per sudlon more. In Scotland benzole is 1d. and in Irelond 3:1 wote !eventon. An extra charge at the rate of 10. fer gallon may be made for any quantity less than 2 gallons.

New lork state will require 750,000 sets, or a total of 1, (3), (H) motsr rehicle plates for 1921 .

## Using Gease and Oil. <br> (Continuerl from Page 9n

Wheel bearings may not require repacking with graphite or grease, more than twice a year, but many owners allow these to go unattended for a year or more.

High pressure grease lubrication is being used on a grcat number of cars for such parts as spring shackle bolts. It is excellent for this purpose and far better than the hand turned grease cup. In some places where grease is not the desired lubricant, and where oil is used, automatic oil culls onght to be used. These cups, filled once a month cr so, feed the oil constantly. The old fashioned oil hole is practically gone, so is the cheap oil cup of small size with snap cover. They get covered with dirt and the oil hole becomes clogged quickly. It is difficult to force oil in place without forcing some dirt with it.

There may be as many as forty points of lubrication on a car, using grease and oil, or perhaps graphite. Every, owner ought to have available at all times a lubrication chart showing clearly every important part of the car. The more often you attend to these parts the longer your car will last, the easier it will run and the cheaper will bee your motoring.

# NEW ELECTRICS SHOWN！IN U．S． <br> <br> Yangtsze Hotel，Nanking 

 <br> <br> Yangtsze Hotel，Nanking}

Steinmetz and Berg Make Debut at New York Electrical Exposition．

Two new electric velicles were seen by the nublic for the first timo at the New York Electrical Exposition which was held in October．Tiney were those of the Steinmetz Electric Mctor Car Corp．and the Berg Electric Car Co． The former showed loth an industrial truck and a com－ merial vehicle，and the latter a passenger car．Both are said to prosess new features of design and construction．

TRAFFIC OFFENDERS PAY BIG FINES．
Whe busiest day in the history of the Traffic（＇ourt in $N \in W$ York city was recently recorded，when fines for the day totaled $\$ 5,325$ ．Amounts ranging from $\$ 2.5$ to $\$ 50$ were impored on each of the 12．offenders

## American Tires in the Old World． <br> （Continued from Page 87）

It may be granted that the removal of a detachable rim，particularly when it is old and ruety，is not so easy as the removal of a detachable wheel when the latter is new， and if both devices are equally neglected，the detachable rim has still certain possililities of trouble which exceed those of the wheel．But a detachable wheel can be a very， obstinatse customer if all is not well with it，mechanism， so that the amount of trouble experienced with the two typer may be so nearly equal that they will be indistinguishable to the harassed mechanic whose jot it is to accomplish the work．When both are in good order，the wheel，it may be granted，can be removed more rapidly，but against this can be placed the fact that certainly it is easier to carry， two or more spare rims than it is to find place for two spare wheels，and，for anything like serious touring，two are a necessity．Here，again，the rim scores，in that the tire may be rejlaced more easily and the motcrist may not think the weight added to the wheel as a result af the de－


Possibly Olympia and the White City mily see British manufacturers providing rims especially for the straight－ sided tire－alroidy Britisi manufacturers are making wired－on tires－which will raise th：whor：coniroversy anew．

The average motorist must remember that the bemdede odge tire is something tlat is known and matavenot ：He wired－on tire is，comparatively spoaking，a stranger．I＇ossi－ bly the rivalry between the bypes may lead，as so often these rivalri＇s do lead，to compromises from whith muth
 for is that outer covers will bo dotarhable：in the future， without the use of levors．

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The coil spring shoct absorber shomen is

just hrin!!
introdured to Forml an'M.
crs. It fits
all models of
the car and
is made for
front and
rear springs

1 seft perdal fior the ucerelcruter
is ther i.tera "if an" Imericret" inventor shown hererith. It may be folded out of the way when nent in nus' "und is adjustuble



A uru indra in an arljustuble steering wheel which enables the driver to get out nut his sirle of the car is st own here for Forl cars



Turning your lights on at the proper time by means of a switch is the use of the Cor-Lite attachment which maly be used on any clock


A winter convenience is the Utility heater designed for those who wish a heater sunk beneath the floors. It is controlled by a simple mechanism from the driver's seat and is made in various sizes for various cars

Temptrol, the devise illustrated, is a simple mechanism for regulating temperature which is operated by hand from the instrument board. The device consists of " butterfly valve in the circulation pipe and an operating valve run. ning to the instrument board


## BRITISH IMPORTS INCREASE.

Gasoline, However, Shows a Falling Off Compared With 1919.

There is only a slight increase in the number of motor cars, chassis and parts thereof imported doring August as compared with July, the tetals boing : July, 4,731, valued at $£ 2,116,787$; August, 4,954 , valued at $£ 2,356,501$. In August, 1919, only 600 vehicles wera brought in, the value being $£ 416,168$. In the aggregate, however, covering the priod of eight months, thise is a striking increase c'rimpared with the same period in 1919. In the present year 30,216 vehicie: have been importel of a total value of £16,376,561: In 1919 England imported 1,530, valued at $£ 2,321,305$. (Going lack to the prowar yex, 1913, thes inportations were $10,29 \cdot 5$, velued at $£ 3,284,079$.

Mutorem exports are increasing lut by slow degrece. In July England exported 839 vehicles and parts thereof, valuet at frus, 159 , and in August 870 , of a total value of $£ 874,529$. In the samo month of 1919 only 132 vehicles wire exported, valuod at $\mathfrak{f} 20,042$. The figures for the eight months ended August 31 st show that in 19204,252 vehicles, vilued at $£ 4,441,424$, were exported, comparod with 1,098 , <f a value of $£ 1,455,827$, in the same period of 1919 . The country has not yet reached the figures of the pro-war year 1913, which ware 5,597 , value $£ 2,319,401$.

Imports of motor fuel during August have fallen by $6,462,955$ gallons, the quantity brought in during the past month being $16,800,791$, against $23,263,746$ gallons to July. Compared with 1919, the quantity imported during the eight months ended Angust 31st also shows a decrease, the figureis being $140,935,081$ gallons in 1919 and $129,982,349$ gallons in 1920. Re-exports of motor fuel in August were $1,083,80 ; 3$ gallons, against $2,865,583$ gallons in July. Duty has beeu paid on $21,266,3: 9$ gallens during Auguit, and on a not quantity of $123,282,767$ gallons during the eight months.
"PLEASURE CARS" ONLY 11 PERCENT.
Reple from about 10,000 ant mobile owners, to the American National Automobile Chamber of Commerce quostionmairs, show that only 11.2 percont of passenger cams, apprently, we usel for reration only, and that about 60 porent of fassenger car milcago is tor busimess.

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I British motorist has solvert his problem of carrying a speedometer, "Wratcl" ant his suritchers by the aboere aluminium dash between the handle bars of his cycle

## CYCLIST PERISHES IN MOJAVE DESERT.

Blistering Heat and Thirst Causes Death Following Accident.
Details of a desert tragedy which claimed the life of Merk Sunar, Lis Angeles, California, motorevelist, who perishel from thirst on the Mojave Desert, were brought to that city in September by his 12 -year-old nephew, who narowly csepped sharing the fate of his uncle an the il!stared trip. The wreckage of the motorcyde was shipped to Los Angeles.

Accompanied by his youthful nephew, Sunar, driving an Indian Powerplus with sidecar, started fiom Los Angeles on a trip for Miani, Asizona. About 10 miles west of Agua Calitute (Sprnish frx "hot water") Sunar lost control of the rehicle on a bud piese of desert trail. The machine swerved against a boulder and was damaged berond hope of temporary vepair. In his efforts to push the machine into the sherle of a mesquite tree, Sunar fainted from the blistering desert heat. His nephew made hime as comfortable as possible, placed a canteen of water near him, and set out afoot in search of helf. The terrific heat tortured the boy almost bercnd endurance before he reached Agua Caliente, with his tongue swollen and nearly exhansted. In the little desert town the lad told his story to a number of men who volunteered for the rescue.

Returning to the spot some bours later they found a coat and shirt and the emp.ty canteen, but Sunar had disappeared. Darkness overtock the rescue party, and they returned to Agua Caliente without having found the dying man. The following morning the search was resumed, and after covering an area of several square miles around the spot where the motorcycle stood, Sunar's body was found at the bottom of a shallow aroy, where he had apparently fallen in a fruitless search for water.

The tragic death of Sunay recalls a similar fate that befell Edwin Lewis, of Bakersfield, several years ago. Lewis set out to pathfind an cudurance run route for the Bakersfield Motoncycle Club, and apparently lost his way in the desert. Seeking to find a route out of a barren range of malapai mountains he drove into a box canyon,

THE WORLD＇S OLDEST LIVING THING．


The General Sherman Treer in rinlifornia．which is roncerted to be the morld＇s olderst living thing

## AMERICAN CARS HEAD IN URAGUTAY．

In Montevide the estimated number of automobiles is：private cars， 5,500 ；taxis， 1,580 ；commercial vehicles， $\because 60$ ．In the remainder of the Repuli i are 6,160 cars， giving a total of apreximately 13,500 ，of wlich 10 percent are unservi eable．siles of sa＂s are increacing，but the British prosiects are unfavourable，except in the $£ 1,000$ to $£ 1,700$ class．The percentage of cars is about 60 percent American， 15 percent British，and 25 percent for the rest of Europe．There is，however，a market for British cars provided the features of wide track（ 4 ft .8 ins．）and deep road clearnce are studied．The import duty on motor cars is 24 percent of the declared value，and the local tixes are ：car licence， 2 dols．per h．p．；number flate， 2 dols．； and licence book， 2 dols．

## CLEVELAND PRICE FOR 1921.

Tho（＇leveland Motoreyelo if the coming aran will sell for（i．\＄275 plus siles tax，forb．factory，Cleveland， Ohio．

## MOTOR CYCLE RACING IN GERMANY．

 will be hetd at Dresden on the 18 and 19 of this month．
from which he was urable to omerge by the path over which he had ontered．Tom days later a searehing party fomme whet was left of his remaine aftor the bugards amd anotes


 finding himwell mathe to deto the mathen onl of the
 machine and was endeavoring to cerre it out piowe by piede for re－assembly

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The free importation into Cyprus, until further orders, of motor cars, motorcyeles, parts of motor cars and motoreycles, and their fittings and gearings, is gazetted as from the 20th April last

## AUSTRALTA PROHIBITS BOSCH magnetos

The Commonwealth authorities are strictly enforcing the prohibition of importing into Australia magnetos bearing the word "Bosch," and exporters have been warned that cars and engines exported to Australia should not be fitted with these magnetos

ITALIANS TAKE OVER AUSTRIAN works

It is reported that Italian interests have talsen over the Austrian works of Daimler, F.I.A.T., and Puch Companies
£2 FOR A RESPECTABLE LOOK
Giving evidence at Highgate racently, the purchaser of a bicycle said to have Leen stolen staled that the man who sold it to him said it was his property. "I looked at him," added the witness. " He looked respectable, and I gave him £2 for the bicycle.

GERMAN AVIATION CASUALTIES
A German publication gives the following ariation casualties for the German service during the war: $1966^{2}$ officers and men killed at home fields; 4878 officers and man killed at the front : 2227 oflieers and men wounderi at home fields; 512:3 ofticers and men wounded :a tho front

1) CTRIN'T OUTY OFF RACING ( $:$ OMAG
R. (.) Durant, som of W. (\%. 1) mant of the General Motors Conp and wimme of cons. siderable fiome in the racins: world as " Cliff" Durat, millionatire racer aviakor. amomeses that the has almatomed tho racing game for all time and 1 ill dowh his time entimety for himess foom mow (ol). Ho has filu l'acitice conast righls on
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Wah Chang Trading Co.
AUTOMOTIVE SUNDRIES
American Trading Co.
Brilliant Lamp Co.
Hudford Garage
Kobe Electric Works, Ltd
Montgomery, Ward \& Co.
Mustard \& Co
Wilkinson, He
ELECTRICAL
Andersen, Meyer \& Co., Ltd
Auto-Palace Company
China Garage Co.
China Motors, Ltd
Honigsberg \& Co., Inc.
Kobe Electric Works. Litd
Shanghai Horse Bazaar
Shanghai Motor Repair Co

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Andersen, Meyer \& Co., Ltd. C. 778
Auto Castle
C. 402

Auto-Palace
W. 465

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Central Garage Service Sta. W. 1521
China Garage Co. C. 2403
Dong Chong Service Station C. $1518 .$.
ong Chong Service Station C. 1518.
Eastern Garage....................C. 1159
Fei Lung Garage .................C. 4133.
Grand Garage Francais........C. 2781...
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## T地

A MONTHLY MAGAZINE DEVOTED TO MOTOR INTERESTS IN THE ORIENT

VoL. II
Shanghat, December, 1920
No. 9


The Herert of T'ientsin - I'iclorin l'arli amel riandon llull


## Use Improves This Type of Motor

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On which mileage has been doubled in three years

Five year: ago the Miller I'ire had won a wide respect. But our average mileage has been doubled since then. On one type alone-the Miller Cord-we have spent $\mathrm{G} \$ 1,136,419.00$. Our laboratory and testing expense on that type last year averaged $\$ 10,000$ Monthly. So the Miller Cord of 1920 is a million-dollar tire. And the perfecting of Miller Frbrics has doubtless cost as much.

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# TH上 <br> ORIENTAL MOTOR 

A Monthly Magazine devoted to Motor Interests in China and the Far East Generally

## MOTOR INDUSTRY OF CHINA'S NORTHERN PORT

## Construction of New Roads Creates Tremendous Field of Distribution for Tientsin Dealers

Written specially for TiHE ORIENTAL MOTOR by Upton Close and A. L. Meyer


Tientsin Public Garlen and Victoria Hall

TIENTSIN, which boasts itself of its modernity and smiles indulgently at flan quinturso of medieval Peking, lags far behind the old capiatal in ano seat fientere of mokern progress-motor travel. With all its beantifully paved streets, its embryo skyscrapers, municipal larks, modem sewage and tramcars, Tientsin, or its outlsing districts. possesses no highways or motor-roads. Therefore, eighty



The longest drive on "motarable" highatis - whit - "m be contrived in 'remtsin is that fram the limen h |ranal


















this device of the devil to enter her gates. Mr. G. S. Knowles placed the first car upan the then impaved street: of the British Concession in 1908. Dr. O'Malley Irwin brought out the second car soon after. Both cars are of English manufacture, and are still on their four wheels.

The Tientsin motor trade began with the importation of a flock of Model " $T$ " Fords, by Mr. L. O. McGowan, of the China-American Trading Company, in 1911. They proved veritable "white elephants," The foreign population, at that time consisting predominantly of Germans, British and French, were unconvinced of the merits of the "Tin Lizzie," and the Chinese remained aloof from the innovation. After six months of arduous sales propaganda Mr. MeGowan disposed of one car-bought by Mr. Chang Pak-loong, compradore of the Russo-Asiatic Bank, who now rides about in a ten-thousand dollar limousine.


The Postal Service uses a "revamped" Ford truck in Tientsin
The small but enthusiastic commusits of motor-a: drivers in Tientsin son chated at the narrow onnine* of the city streets, and there began to be much talk and considerable wagering on the possibility of breaking through to Peking on a gas-Wagon. The pioneer of thi follie $\mathbb{W}$ : Mr. G. L. Knabenshe, son of the then Amerian (onsulGeneral at Tientsin, who pushed a Fcrd through in eleven
and one-half hours in 1912. The driving was very difficult; the car being: compelled to plough through sand on low gear practically the entire distance. The second car to make this trip was an Overland, the first of the make to see the prairies of North China, imported by the China American Trading Co. in 1912.

In this same year, the first "big" drive of the Asiatic continent was made by a chauffeur and a car from Tientsin. Interest was aronsed thronghout the world when it was: heard that the Living. Buddha of Mongolia had purchased a Ford, and that E. E. Le Munyon, of the B. A. T. in Tientsin, was breaking the first motor trail across the Gobi Desert in an effort to deliver the car from the railhead at Kalgan to the palace of the blind Buddha in Mongolia. After great hardship and numerous complications along the route, particularly in the mountain pass between Kalgan. and the Mongolian plateau, Le Munyon got through, and. the thail which he broke is now the route of hundreds of motor military transports operated by the Chinese government and a regular motor passenger and freight service conducted by an American company, the Mongolian Trading Company. The Living Buddha now has a collection of every kind of motor-car which has ever visited his capital, the latest additicn being a Chandler car, driven to Urga. during the recent fight against the Russian invading force. His Highness, being blind and never going out, takes his principal pleasure from his purchases, it is said, in listening to the smooth purr of their motors.

It can be truthfully said to the credit of the motor industry that motor cars have done more toward opaning upthe vast hide and fur, grazing and stock-raising resources. of Mongclia than any other factor. And not only commercially, but also politically and militarily have they become so important that whether or not China maintains its sovereignty over this vast area in the face of the Russian


Two of the passenger trucks of
the Tientsin interurban Time.
a pioneer motor transportation
venture in North China
menace is literally dependent, at the present moment, on its ability to procure a sufficient number of motor-transpoits for surplies end troops. Not only Mongalia, but that vast stretch of central Asia reaching from Manchuria across the tops of the Chinese republic and Tibet to Russian Turkestan awaits opening to trade and development as the peculiar field of the motor-pioneer, and the sign of its modernization is the displacement of the camel caravan by the motor fleet.

But to come lack to Tientsin. In fact, in this little digression to the Gobi Desert we havie never cut loose from Tientsin, for every car there was imported through the port if Tientsin. In this respect Tientsin is unlike Shanghai: that it is far more important to the motor industry as a distributing center than as a consuming market. As mentioned above, Tientsin retains only twenty percent of the cars it imports. This is bound to remain the case as long as the motor car in Tientsin con be used merely as a glorified ricsha-and is regarded more as a "face"-giver than an efficiency producer. Tientsin is a compact city and a car is not necessary to get about town as is the case in Peking, with its immense distances.

Another condition most detrimental to the local motor market is the outrageous license system. A car is worthless if it can not be used in any concession or the native city as occasion demands. The authoritics of the various municiralities, however, have never berm able to get
together on a just and union license charge. The British French, ex-Russian, ex-German, Italian and Japanese concessions each charge $\$ 2$ license fee per month, and the Chinese native city police charge $\$ 1$. Thus the monthly license expense of a car ownler is $\$ 13$ per month, contrasted with the $\$ 4$ per month charged by the Peking police. Through the efforts of the North China Motor Club, a commendable organizatikn of car-owners in Tientsin which is doing everytbing in its power to better roads and traffic conditions, the first four municipalities now allow a six dollar reduction of yearly paid-up licenses. This club recently conducted a camraign for a mion license charge for the city, to be divided among the various concessions according to thisir motorable-road mileage. The scheme fell through due to the insistence of the Japanese upon including all their streets, whether "motorable" or not, in the calculation. Until this strangling license system is reformed the Tientsin local motor trade will suffer great handicaps.

In sate of handicaps, however, the Tientsin motor trade has grown until it is a very consideable item in the business of the port. Up to 1914 the China American Trading Co., Inc., was the only importer, although there were numerons cases of individuels shipping in care or bringing them on trips out from the homeland. It present there are six importers and dealers, abl ont one operating in addition, garages doing reprair and service work. They ar: F. WV. Frazar and ('o., reposentings Dodger. Franklin,
(Continued on Page 88)


Tientsin has modern rodhays-Cormer lider ('ontris and Vicelvers lionds

## MEMORIAL TO LEON BOLLEEE

## Monument May Be Erected To French Motor Inventor

Th II. O. DrNóN IN "The Motor," LonDon.

LE Mans-the birthplatee of Teron Th lle: (.1pril 1st,


 event, the Amtomohite ('luts of the $17 \times 1$ and simethe hats organized some important con-


The late Leon Bollec sumption trials over the "circuit" from the 20th to the 23 rd of (0:tolow. I mimber of toming and ather moton cas will take fout in the contest, which is :mmonmed :ls: " Less Journees


In will be remembered that this well-known motor manufacturerer was the inventor of one of the first three-llheeded -rall cats, which he baptized the "Voilmolte." The British patent was murchased in 1896 for $£ 20,000$, to be paid for in cash hat IT. J. T.als: an an lehali of the Britich Motor symbicate, ('harles damot heing - anstery at the time. A sample French mathine wast: ken e. the fictory of Humber and Co., Itd., so that special working drewings could be made. Walter Phillips was the works manager at Coventry.

This voitmetre, as woll as the domings, was totalls: destroyed by a fire that bunt down part : f the C'oventry works. Lawson received wire advice of the disaster in his office in Holborn Viaduct. When he arrived at the smouldering scone, he raked among the ashes mith his walking stick in the hope of finding some charred parts. Only a few axles were brought to light, and he sorrowfully remarked. "There's iwenty thousand golden sovereigns gone up in smoke!" It should be stated, howerar, that Latwsen had only paid $£ 1,000$ on accomnt and the bills for the balance had not been met.

Some weeks after, the writer (who was alw; for two Tears with the British Anetor Smolicater took a cheque for $\$ 16,000$ to Le Mans to bring back a new witumette and a set of dratwings to I onden. I een TB: Hee hatat me as "hostage" for several days pending advice forn the bank that the cheque had been honemed !

The Joilec roiturette wis exomallly menufactured in England and launched on the market as the Coventry "motette." Clarles McTahic 'Tumell was manging the Coventry Motor Co., Itd. at the time, and after several months the first British-made Bollee was announced as finished and ready for trial. Bollee had expressed the desire himself to drive t! e first "motett," math in the Emglish works. The writer accompanied him to C'oventry where,
with Turrell, he superintended the preparations for getting the merchime into grood ruming order. Bollee had brought with him trem Lce Mans: a wonderful collection of paraThen!alia, insluding !ubricating oil-as little was suitable at that period for high combustion engines in England-and ather adts and ends. He filled the tank with some special petrol then known as "Highly Inflammable Spirit." Then we tried to start the enogine. One after the other took a turn at winding the handle, until finally we were all thoroughly exhausted-and without the slightest hope of an explosion! Hours were spent in overhauling every possible part that might have an influence in getting the machine to start. The cabluntor was cleained, the platinum tube (sparking plugs were then practically unknown), the pressure lamp and everything else was minutely examined. In fact, numerous parts were removed, cleaned, scraped, and rephacel, yet there were no signs of lifs


The early type of the English-built Leon Bollee car
Night came upon us. Both Bollee and myself had a sleepless time trying to solve the mystery of the first Britishbuilt machine. The morning passed in exactly the same manner as the day before. During lunch I suggested to Bollee that failire miglit be due to the "Highly Inflammable Slivit!" None of us had thought of this, because Bollee had assured himself that the stuff was of the right gravity from a test made with his special "densimeter"-which always formed part and parcel of a motorist's tool kit.

Before returning to the works, we scoured Coventry for some motor spirit, but all we could find was some benzine at a chemist's shop. Bollee said that no harm could be done bv tying this new mixture, so we purchased a few pints. The tank was emptied of the "Highly Inflammable Spirit" and refilled with the benzine. After the platinum tube Was langht to a white heat hy the pressure lamp forming the ignition, Bollee turned the handle and to our surprise the engine started up immediately! We had a pleasant run to Leamington and the first English-made machine was adjudged a success.

## CHEVROLET AND O'DONNELL GO WEST

## Famous American Speed Drivers Victims of Accident at Los Angeles

No other form of modern day sport claims its victims so closely or as spestactiarly as does motor racing. There are few forms which bring as many thrills loth to the participants and the mlookers as does the so-walled "fealliss, deeth defying cream of sports."

Two of the most krilliant stars in the firmament of motor racing in the United States and in the world went West recently in the pursuit of their favorite vocation, as a result of a smach-u! on the Beverly Hilis track at Los Angeles, Califomia.

Gaston Chevrolet, the first victim of the accident, was the grand old man of the American track, a designer of more than extraordinary ability and a fearless driver. His feats at Todianopolis and elsewhere during the year of 1920 had made him the year's motor champion on points scored. The machines he had driven were of his own concoption and building.

Fddie O'Donnell, the sccond victim, was none the less well known to the Amerisan public, and thengh young Wats a battle scarred veteran having hovect between life and deatl! some years ago at Kansal (ity after having l. ft the track and smashed through a fence cvar in embankmont. He was a member oif the Duesenberg team heuded by Tommy Milton.

The accident came on November 25th in the midot of one of tise Iacific ('cast's most luillinht naces of the Sali with all of the "ream of the Amerion divers competimg the 250 mide motor peedway chempicnehip on the Beventy Hills track at Los Angeles. The race what a very hot antwat with Chevrolet, O'fonnell and Joe Thomst domes ambe extia gooding in cader to make up a hall hozan lyp they wole bohed on as a 10 ult of visits te the pite.

The smashup (ame on the fifteenth lap. In thair weres-

 and befere be belyed the danger bed chathe int: brtike




 Brady, ('heverlet's mechamician, Wat aks mimuls imjomed lat thete are hopes for his recesery
 of two hores, twonl-five minnter and twent? ser mot for


 fimished thaid in two hours and Iwenty-einh mimmer.

## AMONG THE "OLD TIMERS"









## THOMAS TAKES GAILLON CLIMB

## Sunbeam Racer Walks Away With French Hill Records



The giunt tovelorsepower Sunbeam

Rene Thomas, piloting a 450 h.p. Sunbeam racer, was the star attraction at the ammal Gaillon hill climb, when he bruke all
 records by making the flying kilometer up) the 10 percent gradient in 2023 sec. This is at the rate of 108.3 miles an hour. The official record for the hill, established by Erle on a German Benz, in 1913, stood at 23 see., but in addition to licating this Thomas also wiped out liss own unofficial record of $213 / 5 \mathrm{sec}$. established with the $4 \frac{1}{2}$ litre Ballot 8-cylinder racer. This record, although having been officially timed, never got official recognition, for it was not done on a race day.

Thomas drove the Sunbeam as a single seater, but carried a bluck of lead of $1: 1$ (1). representing the weight of his mechanician. This lead was bolted down to the floor boards, but owing to the boits breaking, the lead jumped up and hit Thomas on the leg, throwing his foot off the accelerator. Ludcubted!y but for this the car wonld have mate better time.

Thomas received his racing monster from the English factory of the Sunbeam company only four days before the race, and did not have time for adequate practice or preparation. He only went up the bill twice in practice. The car being too fast for the open road, no other practice work could be put in.

It is the intention of the Sunbeam company to enter the car for next year's race, and to have it better prepared for the loca! condition, when, it is believed, a speed of 120 miles an bour will bie obtainable. Thomas equipped the car with Hartford shock absorbers, using four per axle.

Jean Chasagne nade the scond fastert time of the day with one of the 8-cylinder Ballots used in the 1919 Indimaplis race. His time wan 3 ; - whe whe while beating the old Benz record, did not equal the time made by Thomas a rear ago on the same car. I special d-celinder Ballot racer of only - .T ly 5.1 inchee hore :end stroke, was the thind fatest car of the day, climbing the hill in 31 sec. or at the rate of 72.1 miles an hour.

Irone Themens
at the wheel trouble. h.p. per litre of piston displacement. the cylinder and the base chamber.


Peculier wind splitting design usca
on radiator of giant Sunbeam

This car, having a piston displacement of only 116 cu . in , was dewigned liy Engineer Henri and built in the Ballot shops last year. It was proposed entering it in the last Indianay lis race as a demonstration only, but unable to get a guarantee that the car would be allowed to start if it did not show the minimum speed under the Indianapolis rule, Ballot decided not to send it across the Atlanitic. The machine was handled by F. Renard, former mechanician to Thomas. Under formula the little Ballot got first place. Another remarkable performance was that of the Lisorne racer driven by Colomb. With a four cylinder engine of only 80 cu . in., and a weight of 1560 lb ., this car showed a speed of 68.1 miles an hour. The engine was built in 1914 for al race intemupted by the war, and the carvaced for the first time lass month, when it was eliminated by clutch

Engineer Canzan: a specialist in high efficiency engines, undertook to prepare the engine for the Gaillon race and with special timing got $47 \mathrm{~h} . \mathrm{p}$. at 2,290 revolutions, as recorded by the electric dynamometer, this being equal to 35.6

The encine has four separately cast cylinders bolted close together so that a single water jacket is formed. The head is detartalile and is held down by bolts going through

## CHEFOO BUILDING A MOTOR ROAD

A 480 li motor road is now under construction from Chefoo to Wehsien, according to recent reports from the north of China. The work of building was begun on November 1 and up to the present 140 li is comr leted.

The road is divided into two sections, one from Chefoo to Lungko and the second from Lungko to Weihsien. It is said that 101 motor trucks have been ordered to operate a passenger and freight service on the highroay. A charge of $\$ 5$ will be made for the trip from Chefoo to Weihsien. It is hoped later to extend the road on to Tsinan.

# FORECASTING THE OLYMPIA SHOW 

A Who's Who of the Principal Exhibitors at Britain's Largest Event

By C. Cokiayne Naylor, London

THIS IS BEING WRITTEN some months in advance of the opening of the big Motor Show which will lie held in Olympia and the Thite City in Iondon in November, and by the time these lines axe read, the Show will be a thing of the past. It is quite likoly that some of the details given kelow of the exhibits will be slightly inaccurate. Eleventh bour changes occur on the best regulated stands, but as far as possible manufacturers and con-


The "Austin Twenty" standard touring car
cessionaires know exactly what will be shown months in advance. The Motor Show has usually been known here as the Olympia Motor Show, but so crowded have the stands hecome, and so dense the number of spectatoris, that this year the Saciety: of Motor Manufacturers and Traders decided to hold two Exhibitions simultaneously, one at the White City -so well kncun to Overseas visitors as the scene of the Franco-British Eahibition-and the other at the usual exhibition house, Olympia.

On Stand No. 56 at Olympia, Crossley Mctors, Ltd., are exhibiting their well known $25 / 30 \mathrm{~h} . \mathrm{p}$. J..F.C. Model. There is little change in the $25 / 30$ Crossloy. It is a t cylinder car with bore and stroke of 100.6 mm by 140 mm . giving an Li.C.A. rating of $25.6 \mathrm{~h} . \mathrm{p}$. The crank :hatt is of 5 bearing type, lolsicated on tho pressuro system by a jump, at the forward end of the camshaft, the oil being delivered to the bearings by direct loads. The (rosstey peopte will use Smithis 4 -jet type carbunctor with an extra jet inded to facilitate stanting.

It is interesting to note that the (rosishey p.onde intend to make a 19.6 h.p. Nodel with a promise to the phthe of aceessibility of all parts. 'I'hey intond manes a 4 exlimder
 faringing on all springs is embilliptic with sxeptisalalls


 ful cats exhmited and wate grealy admiod. Vrom a bis man

smaller in the 11.9 Calcott. This little car is one of the best of its class. Simplicity in ccoling, a good carburetor, wariable ignition, good springing and full equipment leaves little to be desired. The car is retailing at f.50 for the two seater, while a coupé can be obtained for another $£ 100$

A still lighter car is manufactured by Messre. C. E. Richardson \& Co. Litd., and is one of the few friction dtiveni cars that will be seen either at Olympia or the White City. It is claimed that the friction material used should easily do 10,000 miles kefore requiring any renewal, but as these friction driven cars are often the motorists' first purchase, the probabilities of careless handling will not allow the manufacturers to guarantee more than 3,000. The car is equipped with an electric lighting set, and though of course an electric self starter on such a small car is not necessary, a geared une mechanical device attached to the stanting crank ensures easy starting. Two sized engines are being used, the first a 8 h.p. J.A.P. $85 \times 85$ c. c. 980 , the sccond a 10 h.p. Precision $85 \times 96$, c. c. 1090.

One of the cars that has made good is the 11.9. Bean which is to be seen in gnantities now on English ronds. The firm are showing at stand No. 437 in the White City.


The Beall t-pussenger ll.9 h.p

 a hone - catar coupre. 'Thwo will all has shown :1 the 11 hitw


 b:







to the off side, whilst the frame has been considerably strengthened and the rear wheel track widene d bo it a ans. This of course applies to the $16 \mathrm{~h} . \mathrm{p}$. model Sunbeam, though


 parte also ?




miting of very fine timing graduations. The drive to the dyamberm the water fondrefindle in this model is by a shaft through front and rear universal couplings.
 Walton-on-Thames, ane diym ing a complete cal at 39.5 grine:" with an oretall lemgth of 12 ft ., widh of j (t., amd accommodation for two pecple, with a dickey seat for a third if de: ired.

Another shall car is the 10,12 fome covinder Triton selling at feor: for a de luse 4 semter. We hope to retum to this model later. In the Haper ban cembination, concerning whose Bean car details have already been given, is the Valewn Engineoting Complny of Southport. The 1921. phogram pries two model.: of 16 and 20 h.p. respectively. The 16 h.p. ramins pactiouly unchanged and whis with a two :cater body of ters, whilst for the fire seatex


A Hillman coilpei sellin! at firlol
ancther f.2. is addod. The en h.p. Valean hin an engine of $90 \times 130 \mathrm{~mm}$ bcre and stroke, rating $20.1 \mathrm{~h} . \mathrm{p}$. R.A.C. ('yinders, mimber four cast es: Ife with valses of gat size and adjustable tappets. Lubrication is by gear pump, water
(i)culation hy centrifugal Lump). A British magneto and \%-nith (arthetor are used. The gear box has four forward : wode mal ハ-v:No with a central gate change. The fullest clectai al (quipment is, given and the paovisional price has 1. con fixed at \&-So.
linson Hunsty (ars are to be seen at stand No. 20 two models being shown-16-20 h.p. and $20-25 \mathrm{~h} . \mathrm{p}$. The former i: to siell ot $f^{\prime}(9$, the latter at $£ 790$ for open touring co. 'The firm will aloo :lew one of the larger cars with an nataon diven satoon body and also with an interior driven Coupé body.

Nincrva Notors alios find a place at Olympia at Stand N. č. They have on vicw a 20 h.p. and a $30 \mathrm{~h} . \mathrm{p}$. chassis. The former is a four and the latter a six cylinder. They also show a complete $20 \mathrm{~h} . \mathrm{p}$. Minerva Landaulette which cats six or seven pecple, and thoy hope to shew a $30 \mathrm{~h} . \mathrm{p}$. Indaulette body by an eminnt Brussels Coachbuilder. ricees for thece cars are not yet fixed. A high class French product that should be Lotter known in the Dominions Oversoas is the Vemorel. One Vermorel chassis, a torpedo car, a four seater toming car and a saloon car will hu shown. It is very happy to turn to a bonny little car like the British standard light car. The Standerd is a car that is easy to handle, clean and keep in repair, and in short, is everything that is required. The chassis price is £525, ancther £70


The new 8 h.p. Rover sells for $£ 300$
is added for the two seater body. A four seater Standard vells at $£ 645$. The equirment is of the fullest description. Ancther light car, Lut not quite so well known, is the Wilton 11.9. The firm make a special claim for economical running. They also claim simplicity, accessibility, ease of control, cleanliness and comfort. A good point about the Wilton cars is the cantilever springing, and selling with a two evatcr body at $£ 550$, or a four seater body at $£ 590$.

Tast tear one of the most attractive stands was undoultedly occuried br that eminent Luton firm, Vauxhall Mators, Ltd. The Vauxhall people axe buiiders of cars de luxe. 'Thcir $2.5 \mathrm{~h} . \mathrm{p}$. medel is to l. seen evorywhere and is es, centially a connoissem's car. At Olympia they will show a 2.5 h.p. chassis with a Tauxhall-Windsor interior drive limousine. The second exhibit is a Vauxhall-Kington 4/5 seater. The color is a light Vauxhall blue with wings and frame black, the upholstery in blue antique leather with

[^47]
# HOTCHKISS DRIVE EXPLAINED 

First Presented in Paris on Car of Same Name

HOTCHKISS DPITE refers to a tyre of motor car construction wherein the driving and braking reaction are taken through the rear srings of the car, writes Roy E. Berg, technical expert of "Motor Age." Hotchkiss drive was first rresented to the pulli on a Hotrhkise car exhibited in Paris in 1904. This car was be ilt by Georges Terrase in the factory of Benjmin B. Hotchkis*, am American citizen.

It was found that satisfactory results with the drive and good susfension could only be obtained with very long broad springs, having a smali camber. This drive passed through an experimental stage, but the prnciple has not been changed. The uss of Hotchkiss drive is connined almost entirely to cars equirped with long flat semi-elliptic springs which are asually slung vinder the rear axle housing in order to bring the driving line into as near a straight line as possible

Attempts have been made to use this type of drive with
 effect when cantilevers are used is to intensife the rolling motirn that in clamerteristic of this, ring and at high - wed it is imponille to keo the can on the rend. The primple of the drive is diagranationlly hown in Fig. .2. Tl e
 propulion and reation.

Reíer to Fig. 3. When a cal is starterl these itendency for the front of the axle housing to lift. If the prrings are designed to take this reaction which is propulsion they will ast as shown in Fig. 3. This diagram is
 When the ear i: limated those is a tomdency for the front
 - hown in Fig. 4
 rods the rear springs are gencrally rigidly attached to the
 and chearled ot the 1 ar in cader on kof tlar rear oxh in shigmoest with the reet os the








The spring constraction applied to the first car buitt by Benjamin









## "WHY ARE A DUCKS FEATHERS?"

## Elúsive Mallard May Change all Theories Regarding Dirigibles



The new "Pony": blimp. or
two men "Flyabont," may be
userl to test Dr. C'offin's theory

THE LOWVLI DCCK is standing upon the threshold of fame and international renown!
Whether the elusive mallaxd winging its-way, noisily over marsh lands of the hunter's paradise, or the comnion barnyard variety quacking its way lazily through life, its ludicrous waddle soon may take on new significance and become a boastful strut of pride and egcism.

This web footed anatine bird, long despised, ridiculed and ignored by mankind because of its clumsiness and indolence, is about to step before the spot-light on life's stage, as the official disructer of long standing aeronautieal theories.

It threatens to explode and completely contradict accepted beliefs of the world's leading aviation experts.

It promises to turn scientific theories topsy turvy.
It even bids fair to cause radical change in airship construction in the United States.

And all because somebody asked the question: "Why are a duck's feathers?'"

The answer may take conquerers of the air back to nature for one of the most valuable lessons they have ever learned-a lesson that may prove a vital factor in improving dirigible navigation, and that may disprove the universally accepted and hitherto unchallenged theory that a smooth surface object meets less resistance when propelled through the air, than a rough surfaced object similarly propelled through space.


The evolution of the airship hull. Light lines illustrate former ideas of building. Hewly lines showe prosent contonr of dirisjible hull

Experiments upon the duck, or to be specific, upon the "Why" of its feathers, have been conducted recently by Dr. J. G. Coffin, director of research of the Curtiss Engineering Company of Garden City, Long Island, with subsequent tests of a similar nature on small dirigible models for The Goodrear Tire and Rubler Company in whose Akron plant now are under construction lighter-than-air ships ranging in size from the new $A$. type or two man "Pony" blimp of 35,000 cubic foot air capacity, to the monstor Navy D. class dirigibleș or Goodyear U-A type of 180,000 cubic foot air volume.

The "Why" must be more definitely established by further experiment and scientific test, however, for neither Dr. Coffin nor the Goodyear aeronautical engineering force is satisfied fully as to the absolute plausibility of the new theory just evolved from the study of the duck, and neither is willing to make a definite announcement until such time as the theory can be substantiated by actual fact.

A dozen or so jears ago pioneers in aviation and in construction of the world's first navigable lighter-than-air ships, in seeking a shape for the balloon or gas bag which would meet the least resistance in the air, worked upon the then logical theory that a sharp nosed object propelled through space would meet less resistance than a blunt nosed hull. Awkwardly shaped hulls with sharplly pointed prow and blunt stern were constructed, their builders, co-inciding in the belief that a cigar shared bag, the most pointed end foremost, would achieve the desired result rather than making the blunt end the front of the hull: They clung tenaciously to this theory and worked painstakingly, finally going from one extreme to the other and from the short squatty and oval shaped bags, to the attenuated sausage shaped hulls. Some of these were illy proportioned with an aver-all length nearly eight times the maximum diameter. But still the desired result was not obtainable, for the slender hull was found to meet equally as much resistance due to greater skin friction.

Just about that time, in experiments upon models to ascertain the proper shape for ships so as to reduce resistance in the water, someone propounded the question :-
"Why is the fish built exactly oppasite from the ship with sharp prow and blunt stern, with the blunt end of the body of the fish foremost, the body swelling to maximum diameter about one-third of the way back and then tapering to slender tail?"

The question was recognised at once to have great merit and resulted in carefui study of the fish by shipbuilders. And as a study of the fish brought about a change in ship construction unconsciously it influenced airship building, and while not definitely given the whole credit, no doubt was partly responsible for experiments which resulted in contradiction of the original theory, and established the fact that due to the deflection of air currents by any object met less resistance than one with pointed prow.

History reveals that the first fish in existence were short, squatty and clumsy in shape. But as the evolution of all things has come about with the ages and through nature's adaption of every form of life to the specific and respective conditions met by each, so has come about the evolution of the fish to its present general type of stream line build, designed by nature for speed and ease of navigation in the water.

And in much the same way, through repeated experiments, has come about the evolution of the lighter-than-air ships, from a clumsily shaped hull to the present day type of blunt nose, slender hull with tapering rounded tail, and stream line effect. The theory of deflected air currents lead to discovery of the fact that the contour of the tail of the dirigible hull was really more important than that of the nose, tests proving that the blunt nose deflected the air sharply, throwing it away from the hull and creating a partial vacuum or suction along part of the ship, with the deflected air currents returning and striking the rear half of the bag and tail with a positive pressure. This same theory held good when applied to the fish, tests


The hull of the new "Goodyear" conforms to the general build of the body of a fish
showing that the blunt nose deflected the water in much the same mamer, with the tail property desighed by matme to resist the positive pressume of the retuming water currents.

Only recently Goodyear aeronautical engineers decided to study more intensively in an effort to determine whether or not some specific feature provided by nature, could not be found which could be incortorated advantageously in dirible construction. It was found that the average


A diagram of Dr. Coffin's new theory as to the function of the duck's feathers
maximum section of the body of the fish was 36 percent of the total length back from the nose, while the maximum diameter of the present types of dirigible hulls ranged, according to the type and size of ship, from 33.44 percent to 42 fercent back. This made as interesting comparison and was on the verge of leading to other experiments upon the fish, with everything going along serenely in dirigible building, when there came along the disconcerting question:-
'Why are a duck's feathers?",
Nature never has bean in the habit of providing various forms of life with superfluous appendage merely for ornamentation, and the commonly accepted belief was that the duck's feathers functioned solely in providing both warmeth and lightness in flying, the sime as thuse of the bird.

Dr. Coffin's 'steenth sense, however, frompted him to set about the task of secing if them was mot some ofthe undiscovered function. Se became curinus when whether or not they had anything to do with a duck's propulsion.

Taking a stuffed duck he placed it in the immense Gurtiss wind tumbel, amique contrivance in whishaplatac and dirigible models are tested for air resistance and stability, by a wind relocit! which can ber mentated from 20 to !9.5 miles an hour

The air resistance of the stulted duch was comefully noted.

Tleen 1)r. (colfin tested a wowk mondel of the salme duck in the wind tumer.

I's his amazament the wooten model with polshead surfate met greater resistamo hater the sumed duth
"rontimuct on Potgri : 1

# The Oriental Motor 

Motoring-Motor Cycling-Aviation<br>A Monthly Publication Deroted to Motor Interests in China and the Far East Generally.<br>Founded April, 1919.

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## EDITORIAL.

## SERTICE.

The word envice on connecticn with the motar wh of the lar East is begiming to bose the emp, y me:ming that has hithelto leen atteiched to it. There has heen much alk in the past of ervice but lithe of actual tembering. velopment.

Realizing that service to motor owners in tire matters, the upkeep of a motor car and in all of the branches of motordom is necessary to real success the operators of motor establishments in China and elsewhere are striving to place their organizations on a high plane of real efficiency.

New departments are being* organized and new men trained in the trade are being brought in to manage them. Dealers are recognizing the pressure of increasing competition and are now rendering to the motor owner the service that he should and must have.

Sthice han reached a rery high standard in the f inted States and many of the larger wholesale, retail and mamfacturing interests in the motor trade have large departments devoted to this part of the work. Tire selvice includes relief any place at any time. Mechanical service is placed upon the same plane.
( bina at the fresent, howerer, does mot sequite such an extenve uee if arvicing. But the dis is comitig when Clamand the Fon Fabt will oxnme a diff rent lasition in the world mootor demand and the service rendered will comut for much if the foundation is laid now

## STREET REPAIRS

In strect relairing the work of the Mrunicipal Council of the Thtemational, or sometimes called the "Model," Settlement of Shanglai las done much to fumish an example for the (hineoce in the surcmanding native districts. But this grod work is l.eng allowed to become lax because of infringements upon the fart of the corporations controlling the public utilities of the city.

No better present instance of this may be found than the case of the North Honan Road Extension in the native city of ('hapei, shanghai. Some months ago the native officials of this city taking civic pride as an example from their foreign neighbours gave this road an excellent macadam surfacing making it equal to some of the better streets of the International Settlement. But their plans have gone awry.

Recently one of the public utilities corporations of Shanghai has found it necessary to follow the road for the installation of main or ducts. In so doing they have followed the middle of the street, instead of choosing the sides, and cut a trench with tranverse diggings at various intervals. In leaving this work, only dirt taken out has been replaced mixed in with the macadam surfacing and as a result the trench is in many places a foot or more below the surface of the roadway making it dangerous to all kinds of traffic. No effort has been made to replace the surfacing in the same condition as when it was torn up.

Municipal laws in order countries make such a replacement absolutely necessary but this is apparently not true of Shanghai. Instances of the same nature are to be found in the International and French Concessions, where the city government finally repairs the damage done.

Such an example for the Chinese is a deplorable one especially when it is within the limits of their own terntory and oomethisy should be done to make these cases impossible.

## THE GOOD ROADS SLOGAN.

It has been a source of djsappointment to the management of THIE ORIENTAL MOTOR that a greater interest has not been taken in the suggestion made editorially in this publication last month that a good road's slogan would do much to aid this movement in the country. So far only a ferr suggestions for such a phrase from propaganda purposes have been received.

Whether or not it is merely a matter of procrastination (1) *he pant of the readers of the publication or a lack of interest in the good roads mevement, the editors of this journai are mable to aay. The fact remains, however, that the lesponse has been decidedly weak.

The better highways cause in China at the present time is receiving more atteention than it has since the days of the old Imperial roads. Little publicity is being given to the road movement but its growth is steady. The government is luilding roads with famine labor, the American Red Cross is doing the same and in some sections of the North, private
individuals, particularly native merchants, ate availing themselves of the opportunity offered both to relieve suffering and deserving people and to extend passable roadways.

In the routh, (anton is finishing up her cimn streets and is looking toward their extension into highways which will penetrate the surrounding country.

What is most needed is an organized propaganda to put over a national interest in good roads. " Ship by Truck" in less than a year with other advertising and propaganda matter convinced the United States of the advisability of using the motor truck both for long and short hauls.

A good roads slogan will net build reads in ('hina, of course, but one that means much, can be translated into Chinese with ease may be the beginining of a general campaign. A campaign will not take effect in China in six months or probabiy not in two or three years but a constant hammering will wear away all opposition and point the way to realization. Send in what jou think would be a gocd better highways slogan.

## (HALFFECR'S DISCOTNTS.

The phrase, chauffeur's discounts, may be somewhat too prosaic a term for the "squeeze" demanded by the native drivers of the motor cars of their cwn comntromen ce of fiseigners in: no matter what the term, the motor car owner i- under the thumb of his native driver. Not only is this tunce of the motor car owner but the dealer, whether it be in fuel, ucceswories or motor cars, is also fored to recognizad a well uganized system of what would be called graft in ,,ther countits.s.
(hina has cften been characterized as the "Land of squecze" and most certamly every ono its natives woks on a commision lasir, from the conlie in the strects on up. The chanfems spella to have a system which is somewhat more highly organized than those of the other workers.

In every phase of the antomotive industry the chatuffern (")me's in for his part of the rake-ofio. In many instanese it -tarls with the sale of the car. If the chatufere is allle 1 : lave his onplay buy a cal of a concem that he can work hise ('hink er equivalent of a mallites font on, bee gets his :om-






 athe dixpere of lablicamte in alike manme





 10.

he has made a bad buy and that he should buy another car -of a different make. They also take the opportunity when afforded to get these repairs done in other shops where the system is more to their liking and financial benefit.

But China does not seem to be alone in this system, for complaints are made in other parts of the world. The following item from the "Motor Trader," London, taken from its correspondence columns under discounts to chauffeurs transfers the subject to another field:
"Sir,-With reference to the above subject, letter concerning which appeared in "The Trader" for September 1.), may we bint out that, ach discounts heing in the form of a tip or parment unknown to the employer, are a breach of the Comrmpt Practices Act, and subject both giver and the receiver to heavy penalities.
'The giving of such commission to chaffeurs and other unauthorized persons is entirely unnecessary, and only shows a want of backbone in the giver.
"The legal position is the best answer to the request. Tell the man it is illegal, however much you desire to oblige him, and you cannot risk your reputation, if he hat me concern for his; and, morecver, you can tell him that, if he takes his master's order to another firm who give him the cammision, you will put the authorities on his track. Antinn way to deal withi this gentleman in to sal: "If your employer in aware of it, we might do -o. Hill: we yom pelmisejon to conmunicate with him?" In nineteen cases ant of twenty this puts an end to the matter.
"If the retail trade had more backione there mould be no bosen for these ahnses to (accy) in.

It would seem that an oportunity iv afforded for the Xumeipal council of shanghat and alow of the othe? ditien
 Operations-to act in the protection of their mator anming population.
 peacetion to the motor owner and to the dealer atilae.





















## FRANCE TAKES GORDON-BENNETT TROPHY

## Sadi-Lecointe in a Nieuport Defeats International Rivals



After waiting all morning for the mist to clear, SadiLecointe, the French favourite, started proceedings by getting away in brilliant flying weather soon after lunch. While he was in the air the second Nieuport, piloted by Kirch, was sent off, followed soon after by the SpadHerbement, then by the two Americans.

While Sadi-Lecointe was in the air, Firch came down and announced his intention of abandoning. He declared that when going round the post near Orleans his engine began to misfire, and that on two or three occasions he had risked striking the ground when traveling at nearly two hundred miles an hour. The mechanics of the Hispano-Suiza Company on the other hand, maintain that there was nothing seriously wrong with the engine, and that Kirch abandoned because of his lack of experience in handing this ultra-rapid plane.

About this time De Romanet landed with his SpadHerbernont, and as Sadi-Lecointe had not then finished, the French began to get really nervous. One of the oil pipels had broken on the Spad, the pilot was literally drenched in castor oil. The situation not being at all promising for the French team, De Romanet pluckily consented to start away again after his engine had been filled up with oil, and he covered ancther hundred kilometres with oil squirting into his face. His final landing was wonderful. Unable to wear goggles, he shut his eyes and brought the machine to earth, at a landing speed of hearly one hundred miles an hour, in a most perfect manner.

[^48]The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

UNION'S
COMPREHENSIVE
MOTOR CAR POLICY
Covers at a moderate premium
THIRD PARTY LIABILITY WITHOUT LIMIT
And also fully indemnifies the Assured for ACCIDENTAL DAMAGE

# UNION INSURANCE SOCIETY OF CANTON, LTD. 

(Incorporated in Hongkong)<br>Established 1835.<br>Policies are issued at the Society's<br>HEAD OFFICE, Queen's Buildings, Hongkong.<br>And also at the following Branch Offices in China:<br>SHANGHAI, Union Building, No. 4, The Bund.<br>HANKOW, Union Buildings, Tungting Road.<br>TIENTSIN, No. 6 Victoria Road.

## PARENTI HAS UNUSUALDESIGN

The Parenti touring model,

Which hires jund buen an.
monncerl. is priced al
(7. \$2,000. The whects are
also of plymmond eronstruction

Laminated Wood Frame And Body Will Reduce We'git


T
 structural members and for body pauels makes the Parenti ear, built by the Parenti Motors Comp, Buffialc, Xew York, a most unusual design, with its wood frame and pancls which are practically an integral fart of the frame. Because of the great reduction of sprong weight made posible hy this wood constrution, new axle and the other parts of unspung weightare of rather unconventional design.

The engine of this strikingly different car is air soole and is: built by the Parenti compans. For the sake of protecting certain teatures of construction, details are being withheld from Iublication. The illustration of the frame and body portars better than words can picture the construction employed The frame used sonsists of two panels of 5 -ply plywood, 12 in . wide and $\frac{3}{ \pm} \mathrm{in}$. thick. These run the entire length of the body. The vertical pillars are of spruce or ash and are glued and screwed to the frame at intervals giving each fillar an anchorage at 12 in . on the frame, a very rigid method of secuxing the body panels. The crossmembers are also 5-ply plywood.

These extend across the body and jcin each pair of pillars :ight and left The panels are of 3-piy flywood and are screwed and glued both inside and outside this skeleton irametork, giving a solid body and frame unit which weighs less than three hundred pounds. In the illustration the outside of patnels of plywood are removed in order to show the pillaw construction.

It is obvious that, with an ordinary spring suspension and conventional chassis unite comprising also the unsprung protions, an unfavorable rcad balance ratio would exist if these units. were used. To overcome and take advantage of the light superstructure a very light weight axle construction is employed. The axles themselves are composed of the springs which strange as it may seem gives a ten point suspension system, whereby four points of suspension are obtained in the front and six in the rear.

The pressed steel flate that joins the end of the plywood frame members carries four steel tubular hangers, two for each spring. The springs are carried from these hangers by means of light forgings which do not hold them rigidly
(Contimuad on Page : $\pm$ )

The front plate spring leanger construction


The frame of the Parenti consist of two panels of $\tilde{5}$-plywood 12 inches wide and $\frac{3}{4}$ inch thick that rinn the entim lenyth of the bolly. The outsinte puncls are removed to show pillur construction

## Goodyear Cord Tires Add Real Comfort to Your Driving

0
NE of the most important elements in the satis factory use of any automobile is comfort.

Without it, the most refined mechanical action is marred, the most efficient performance fails to provide complete motoring pleasure.

In the past, this important element has been relatively neglected-car makers necessarily centered their ingenuity and resources on the perfection of mechanical parts.

But today, with the ability and usefuluess of tho automobile firmly established, much effort is being given to riding-ease.

In this matter, (inodyem Cond Tires ronmesent at tremendous forward step.

They positively onhance tho comfon of may car
Whether on boulevards of in the counter, of smonth highway or dificult rom, thoy smothor shoek, doloat
vibration, absorb impact, lessen spring-throw, insure smooth travel.

The rosilience and life of (ioodyear Comds, suplants the inactive, tightly cross-woven fabric ordinarily used in the tirebody, with thousands of stout, pliant cords.

Layers of these cords are built diagonally one upon the other, without interwease, and each cond and each layer separatoly is insulated and upholstered with is cushion of quicti mblare.

In action, these condsplay fred in the tive, without contact and without frietion, adapting themselver awifll (0) the lift and dip of the road, and yidding sumbenc comfort

Combon alone is mot the mal hasis fin wom chowe of (enodyear Comds. Thes deliser serater milease amd
 and freedom from trouble and the greater distinction they aftomed, all hatre an apmal but mayden is the most

COODYEI AR

## THE POSSIBILITIES OF SCOOTERS

Two Shipments Are Now Enroute For The Chinese Markets

Motor seooters are to make their ajpearance in shamghai and China within as sher time, according to reliable toparts, two shipments being now en route. 'The seroter which is in a way a minattire motoreycle has attracted much attention in Great Britain and Emrope.

A question frequently asked is "where are the scooters?", says a recent issue of "The Motorcycle," ab British trade journal.

Let us admit it-the scouter has litherto proved a disappointing proposition, it continues. Past history has shown us that premature booming of any untried design is bound eventually to react to its disadvantage. We heve the case of the cyclecar fresh in our memories. A year ago we were told that scooters would revolutionise power-propelled bicycles. They were to be produced and sold in thousands at £25. "The Motor Cycle" was not led away by false optimism to join the throng, but, personlly tested the various examples produced, and found them wanting. Believing a comfortable seat to be a sine qua non of any mount intended for general use, and feeling that a satisfactory and practical miniature motor cycle might be developed from the scooter, we inaugurated a campaign in favour of a seat and the development of a lightweight mator cycle. We still feel that there are great possibilities in this direction, and the small class in the junior T. T. Race will assist in producing the ideal design. Manufacturers, particularly those firms new to the industry, will be well advised to cultivate the genuine miniature motorcycle (preferably with an open frame to render it suitable for the use of ladies or gentlemen), having a comfortable seat to enable reasonably long distaces to be covered, and preferably with an emergency gear for slow hill-climbing. A general utility machine of light weight, at a low cost, is the desire of theusands of potential buyers among the ranks of cyclists who find pedalling too hard. Speed in this case is not desired.

## Parenti Has Unusual Design

(Continued from page 22)
but allows them to move freely which produces a floating type of spring.

The eprings exienl clear acrow the front of the car from wheel hanger to wheel hanger and are carrict on the


The spings stretch from wheel hanyer to wherl hanyer ucross the front of the car and in free movement produce a floating type of springs

- 1 ing hathers at dencritad. I'ressed steel tie rods each having a berring at one end on a spring hanger and at the other ant on a wheel hanger, inold the wheels in alignment afid constrain them to rise and fall vertically. Inasmuch as


Three springs are used in the rear axle the two lower ones being in a. horizontal plane to carry light loads on normal roads
the springs tend to lengthen as they flatten out, their outer eide are coiled alcund eccentric bronze bushings in the whece hangers and as the whrels rise, these bushings are lotced to turn inasmuch as their centers are held stationary: $b$; the tie rods and thus this apparent lengthening is taken: if). A double purpce is served by this construction which: overcomes any tendency of the wheels to spread, and the springs are relieved cf cramping regardless of the severity of the limmp.

The same principle used on the front axle is applied to the rear, except that three springs take the place of the two in the front and these are auranged in a triangular posi-tion-one at the top and two at the bottom. The two lower springs which are in a horizontal plane carry the light loads ori normal roads under which condition the top spring is idle. However, in carrying heavy loads over abnormally rongh rads the top spring comes into action.

The differential gears, brakes and driveshafts are carried on the body as spring weight, being attached to the four spring hangers and thus retain a fixed relation to the engine, doing away with variable angularity of the propeller shaft: The drive is caried from the differential gears to the wheels: hy means of two short drive shafts, one on each side, which: are equimped with flexible disk universal joints at either: end, thus allowing the wheels to rise and fall freely and in-deperdently, with the differential gears held stationary.

A feature of the accessibility of the construction is thatthe propeller shaft may be detached at its forward end and the drive shafts at their outer ends of wheel connection points and the dale slate bolts remover after which the whole asle drive unit may be removed from the rear as shown in the illustration.



## REGULATING COUNTRY TRAFFIC

Michigan District Solves Safety First Problems on Roads


Keeping the right side of the roud in the combtry b! means of a diveiting line and an arrow. This marking has reduced the number of uceidents on a Michigun highteay

Regulation of traftic by means of white center-lineshis problem never becomes less but rather tends to become and arrows painted directly on an American county roadway greater.
is described in "Municipal and Comntry Engineering" (Indianapolis) by K. I. Sawrer, Superintemdent of the Marquette County (Michigan) Road Board. Mr. Sawyer states his opinion, at the outset, that the handling of motor traffic upon main highways through the country is rapidly becoming as serious a problem as traffic control has ever been in cities. It has been necessar? in sime cases, as in that here described, to borrow the methods of city traffic control for handling traffic uron congested rual trunk lines. He continues:
"One interesting illustration of this is in Marquette Countr, Michigan, where the traffie on the trunk line between Marquette and Ishpeming has become heavy enough to make travel dangerous unless some means of control is anopted.
"To relieve this situation, the writer painted white eight-inch center-lines mon the black surface of the road upon the more dangerons curves, with an arow pronting down the righthand side of the road at either end, thes to counterbalance the tendency of aute-divers to hug the inside of a curve regardless of the danger of hitting the traftic approaching which might be invisible to them at the time. The effect was immediately apment, as the atuto-drivers accustomed to obeying control signs in the city immediately responded to the appeal of the white line and kept to the right-hand side of the road, and the immediate reduction in the number of accidents indicatel that the seheme was worth while.
"The writer has had this center-line system of control in use for three rears, and is well satisfied that it is the best thing he can do to protect traffic using this road. The road is the main highway between two rapidly growing combmunities, and the wonderful country through which it leads is drawing tomists in greater momber- ewery year. ©t that
'The scheme has been so successful that the writer does not hesitate to recommend it to other county road engineers who have similar problems to meet. Not every road surface lends itself so readily to center-line painting, for the smooth black surface in this case was ideal to make the white center-line stand out in sharp relicf.

Some color scheme can usually be worked out so that the traffic can be reminded that the right-hand side of the road is the only side that properly belongs to them. The motor pubicic as a whole is only too willing to take a hint which is for its own safety, and the scheme is sufficient reminder to keep traffic. within bounds and allow a much heavier traffic to use the roadway without danger, which is net usmally the case on our comnty highways."

## NINETEEN AT COMMODORE SALON

## High Priced European and American Makes in Show

Nineteen makes of antomobiles, European and Ameriann, were shown at the high-priced car salon in the Hotel commodore which opened Ner: 14 and coutinued to the 21 st. Coach work and body design was exhibited by eight body-buitders.

Incluảed in the list of car entries were Brewster, Collins, Cunningham, Dmiel, Delage. Lanchester; Lancia, Locomobile, Meteor, Minerva, Napier, Packard, Panhard, Pierce-Arrow, Porter; Renault, Rolls-Royce, Sunbeam and Winiton

Body builders exhibiting were Brooks-Ostruck, Fleetwoct, Healey, Holbrock, C. P. Kimball, Locke, Leon Ruliay and Linited Body Co. The Tright-Hispano engine wils also thown.


DO NOT allow the high price given Silvertown Cords to make you think they must be expensive. They are best in the long runcheapest in the end.

## Goodrich ilvertown

Americas first Cort Tarl:

## PREPARE YOUR CAR FOR WINTER

Extra Attention Is Needed During the Colder Weather





The old and antipmated tea kettle methorl

An electric heater which atturbers to an ordinary pluy and commects with the cooling systeme

WITH the improvements that have been made in evolving methods of warding oft cold weather in motor cars has come extra food for thought woes. This extra thought is amply rewarded by the results obtained, and the car is better for the things that have been added to it, even though they tend to complexity. The electric starting-lighting system is a case in point, for while it requires some decidedly special wirter consideration, it eliminates the terror that used to tinge contemplation of the necessity for hand-cranking a five-inch engine with the chill of the Aretic on and within it.

Every condition of winter driving seems cunningly calculated to catch the electrical system napping; punishment is provided for every lapse from the straight and somewhat narrow way of efficient care. Thus, if the owner does not adjust, or have adjusted, his generator so that the storage battery will be kept well charged, he runs the chance of freezing up his cells; a completely discharged battery will freeze at something like 12 degrees below freezing point F .

And every condition caused by the cold tends to pull down the battery. Beginning with itself, its action when chilled, is below par in proportion to the degree of chilliness, plus the amount of discharge. Then the cold engine, all its working surfaces almost glued together with halfcongealed oil, requires a tremendous pull to get it started turning, and the chill of the little starting motor itself adds its negative mite to the grand total. After that comes present-day heavy gasoline affair, which can be depended upon to cooperate with the temperature to keep the battery
puring out energy in great kilowatts. And, as it is well known, the car is not likely to be run as lang or as fast in winter as in summer, so that the charging period is shortened, and the early lighting-up time does nothing to help.

As the car is so designed and built that its normal orerating temperature is summer temperature, it follows: that the best winter results may be obtained by approximating summer conditions as closely as possible. And as the heat required for the purpose must come from within the engine itself, it is necessary to somewhat restrict its rapid escape. In some cases the means for doing this are built into the car, as in the case of the Hudsan, which bas: an adjustable shutter over the radiator and also plates, on the inside of the hood. blocking up the louvres. Once the generation of heat is well under way, it is not difficult to maintain summer conditions under the hood, whateverthey may be outside. One of the particular advantages of this arrangement, and cne which the Packard comp ny calls attention tos is that the carburetor operates at a normal adjustinent and fuel consumption is normal, as is also engine lubrication.

In cars unprovided with heat-conserving arparatuswhich means the great majority of cars-it is necessary in seeking the best results, to use a radiator shield or "bib,", and in some cases a hood cover. A good deal depends upon the car and its cooling system. Sometimes the mere discounting of the fan is sufficient to keep things hot under the hood. It is not always difficult to go too far in this direction, however. Too much coddling tup of the radiator

## ANNOUNCING THE

## "Yellow \& Black" Taxi Service



WE TAKE YOU THERE AND WE TAKE YOU BaCK ANY TIME-ANYWHERE

Operating on a strictly cash basis. 80 cents minimum charge.
Monthly credits may be arranged upon application to the head office.

Cars are Cleaned Daily by Vacuum Process AND
Heated by the Latest Heating System Operated by

## SHANGHAI TAXI CO. INC.,

Head Office, 2 Woosung Road, Shanghai. OPEN DAY AND NIGHT

Service Stations
and hood has ocemsiomatly resulted in orertrating thongh with no more serions consequences than the beiling ont

Using dematmed alcohol, which coste about $\$ 1.25$ a gallon. Three are two kinds of alcohcl available, wood or
of the alcohol in the non-freezing mixture. The temperature should be comsidered in the matter, and while below zero may demand close covering, warmer weather will permit the car to mhutton its owercoat, wa to speak.

Alcohol is the most popular anti-freezing ingredient for lowering the feerzing point of the cooling water. It is a good thing to remember that while alcohol lowers the frewing point, it also lowers the boiling point. In other words, an anti-alcohol solution will boil sooner than plain water, and as it boils the alcohol vaporizes first, weakening the solution and gradually raising its boiliing point and its conditions the alcohol exapuates rather quickly, as "ommpared with water.

Glycerine may be used with water or with water and alcohol, and it has the pecnlanty that it boils at a higher temperature than water. But while glycerine is not easily lost from the mixture and does not decaease it. boiling temperature, it does not rery greatly depress the freezing point, a mixture of 60 percent glycerine and 40 percent water freezing at $t$ below rero. Calcium chloride has been used very considerably, and it has the advantage of being easily obtained and not expenoive. It gives an exceedingly low freezing point. A solution of 30 percent, by volume, will freeze only at 60 below zero, while a 20 percent solution freezes at zero, and a 25 percent solution at 20 below:

Calcium chloride, however, is looked uron as a rather dubious chemical, generally speaking. While it is commonly agreed that the pure salt will not affect the metal of the cooling system, it is well known that impure salt will, and it is therefore rather risky to use the stuff unless its quality is positively known. Sometimes it is condemned: it is rarely recommended, and it probably is quite safe to go with the crowd.

No one is using much glycerine in cooling systems these days. Whatever reasons there may be for this, the first one is usually quite sufficient in itself-it is too expensive. Glycerine costs over ten dollars gold a gallon.

A glycerine-water mixture that would stand a zero temperature would, iherefore, cost this amount for a car having a five-gallon cooling system. A mixture of glycerine and alcohol in equal parts with water 70 percent will stand a temperature of about 4 below zero, and will s.tand the owner about nine dollars for a five-gallon sritem,
lí!!isher luf" $\because i$, llumsl luathe i"1



Kemesene burning heater
for hertin!s radiator mbile
in the !!eromere


Conter.-Type or electric nearmerss gor hand while driving
Lower.-This electric heater keeps the cnyine warm
methyl alcohol and grain or ethyl alcohol, the latter, mixed with ingredients that make it perfectly hopeless as a drink, constituting denatured alcohol and selling at about $\$ 1.25$ a gallon, though the price varies somewhat in different localities. Wood alcohol has a somewhat lower freezing point than denatured ethyl alcohol. For instance, :1 solution (f 40 percent denatured ethyl alcohol freezes at about 20 below zero, while a similar solution of wood alcohol will stand a temperature half-a-dozen degrees lower. There is little difference in frice, but there is a good deal of difference in the smell; the fumes of hot wood alcohol are distinctly disagreeable. All things seem to point, therefore, to denatured alcohol as the most practical thing available for making non-freeze dope.

In localities where there is little really cold weather and the only danger is from an occasional might frost, a 20 percent alcohol solution, which freezes at about 13 degrees $F$. is sufficient. That means adding a gallon of

[^49]THE popularity of Cadillac has increased and multiplied beyond all expectation. Yet, not once has the Cadillac organization even so much as considered deviating or sacrificing its principles of manufacture to meet sales demand.


A S in the past-so in the future, Cadillac will rely on true quality-enduring goodness-to maintain its recognition and popularity as "The Standard of the World."


## H. S. HONIGSBERG \& Co., Inc.

40 Bubbling Well Road, Shanghai

PEKING
TIENTSIN

Largest Distributors of Motor Cars in China

## U. S. LOOKING AUTO ACCIDENTS

Auto Killings at a Rate of Two an Hour Bringing Protest

V
 1920 model jugeramat ate (ongjured up) hy a statement reeconty made by an ofticial of the Nitional Dafety Council that deaths from auto accidents occur in the
 during each day's sixteen "waking hours," the year around says the " Literaty ] bigent." The datat on which this generalization was based were obtamed through the si, ono members of the council, with the cooseration of "ity and county coloners and the secretaries of local safety councils. The investigations of this organzation have revealed fom ther that the atmomoble is ammally resonsible for three times as many deaths in the Enited sitates as lesult from all the

acecidents combined on all the steam and clevtric railways, on all river, lake, and coastwise boats, in all the coal-mines, in all foundries and blast-furnaces, in' all the factories and mathershops, and in crets othei mon or 1.... Jongerous industry of whatever sort in the country. The number of deaths in 1919 was about 100 per million of population,
 110 per million, or a little less than 12,000. The facts re-

 the situation, calling for action, and suggesting remedies.
 there are reckless or "inconypetent driving, careles
 more Sun suggests, "motor-car psycholcgy," which may
 perience, and caution in any other enla Mm-1t will eot




City, where there were $\check{17}$ motor-vehicle accidents during the first nine months of the present year, brought out the fact that an amazingly large number of men who pose as chaufieurs are physically unfit for such service because of defective eyesight or hearing. He found many chauffeurs who could not see at a distance of five feet letters which to the normal person would be legible at a distance of 200 feet, and he also examined some men that could not hear a gunshot at 100 feet. Commissioner Copeland further reported that of 7,464 men registered as self-confessed drug addicts, 534 were listed as drivers or chauffeurs, of whom he writes in his report that "during certain periods of each day every such person would be a menace to society." In addition to the physically or mentally defective, there are a multitude of totally inexperienced persons who attempt to drive cars. A story well illustrating how men ignorant of even the first principles of driving will try to handle an automolile comes from I'lhiladelphia, where a man hopped Ento a car in a suburb and dreve down-town, where he was atreated when he rant by "stop" signals. His explanation was that lie knew how to start but not how to stop the machine. The Tacoma. "News-Tribune" believes that "hoodlunism on the part of drivers is a big factor in causing auto accidents." The "hoodlum," it goes cin to explain, may bie a bandit with a stolen car, or a taxi-driver, or a millionaire joy-rider-in brief, any person driving recklessly and with total disregard of the rights of pedestrians and other motorists. "For all such there should be severe punishment, with deprivation of their driving licenses for a period -suited to the offense." The spirit of the times to do everytining at breakneck speed comes in for considerable condemnation, and the "What's your hurry?" slogan, which has been ardopted by some communities, is recommended. The majority of editorial writers by no means place all the blame on the autoists. At good bit of the responsibility for accidents is held to attach to the public, especially pedestrians. On this point, Police Commissioner Enright, of New York, is credited with asserting that about 78 percent of all street accidents are due to the carelessness of pedestrians. This is stretching it a little, however, thinks the New Icrk "Times," and it goes on to say:

His assertion would have beeen more easily credible if it had been put in different form-if he had said that in 78 focent of street accidents there is $n$ measurable element of contrilutory negligence on the part of the victims. He might have gone still further, indeed, and said that in at least 99 percent of all cases had the pedestrian exercised all possible care he or she would not have been hurt.

But, as it happens, it is a matter of certainty that all pedestrians will not exercise all possible care, and as a matter

## Sepuice

does not exist in mere talk but in actual service rendered.

We believe that our service is the best in the Far East.

Our best recommendation is a visit to our work shops. CHINA MOTORS, HIMTTET.

STAR GARAGE EASTERN GARAGE Main Showroom

Star Garage, 125 Bubbling Well, Shanghai.

## NOTES FROM HERE AND THERE

Bruce J. Milen, agent for the Orient of the (ieneral Motors Corporation of the ['nited States, was in Shanghai during the carlier part of this month on a business tour and is now in the North China territory. Mr. Miles has come to the Last from New Jork and is making his head-quarters in Manila.

Singapore, it was stated at a recent Municipal Commission meeting, has 112 miles of road, with road surface of two million squate yards. In 191.) there were 842 motor cars and 80 motor trucks registered, against 2,024 and 338 in 1919. They have a good long start of Hongkong but are far behind Shanghai.

A Chinese aviator is said to be planning a flight between Japan and China. He intends to fly from Shanghai, via Kyushu and Shikoku, to Yoyogi, a suburb of Tokio. He expects to accomplish the flight in nine hours.

Mr. E. W. Frazar, president of E. W. Frazar and Company, Tientsin and Peking, recently spent a few days Tientsin on business before returning to Japan.

Accoording to the "Municipal Gazette" of Thursday, November 24, a school for chauffeurs will be opened at the Gordon Road Police Station, March 1921 by the Municipal Council, upon the recommendation of the Commissioner of Police. The chauffeurs will be taught to drive a car, as well as the mechanism of the engine. The school will be in charge of a foreign instructor. In case sufficient applications aro made a class for owner-drivers will be given.

## general motors opens service agency

## Distributors to be Aided by Office in Manila Recently Opened

In arder that distributors might have a closer connection with the General Motors Corporation of the United States, an agency for the Far Eastern teritory beem established in Manila recently under the management of Bruce J. Miles who has obtained the right from the corporation to act as their agent for the Orient. The territory will include all of the Jar East and Japan.

The new agency will concern itself with service alone and have nothing whatsoever to do with the direct distribution of the various makes of American cars controlled by the corporation, channels for this distribution have beem established for a number of years. Service is the main feature of the agency and traveling representatives will make this possible.

Among the motor cars and trucks that are being distributed by the General Motors Corporation are: the Buick, Chevrolet, 'Cadillac, Scriprss-Booth, Oakland, Oldsmobile, G.MI. (C. truck and samson tractor.

Mr. Wang Ko-yu of the Aeronautical Department left Sharghai recently for the North with ' 19 cases of Avro airplanes which will be assembled in the Nanyuan Aerodecme immediately for instruction purposes. The cases had been in the custody of the Shanghai Commissioner of Customs for the last three months.
H. C. Chow, former proprietor of the Dragon Motor ('ompany, Peking, is spending a short time in Shanghai on business.

Motor car thieves are now coming to notice in the Orient. At Hongkong, recently, a private garage was entered and the car obtained sent to Canton by train. Arrests hare been made in the case, according to Hongkong papers. A bank robbery and a motor car theft occurred recently in Tientsin.

The Kalgan to Urga motor service has recently been extended by the 1 urchase of six additional cars.

The proposal for the inauguration of a motor bus service from Shanghai to Tsingpu has been abandoned after a conference between the members of the gentry of Tsingpu and government officials. Vigorous opposition was met with on the part of the people.

The Peking government is plainning to build a highway from Yue Chen to Ling Ching in Shantung in order to give relief to the famine sufferers of the district. The extent of the road is 240 l . When finished it is planned to start a motor truck passenger and freight service.

Several prominent native merchants of Soochien, North Kiangsu, have organized to construct a roadway from that city to Hsuchowfu, a distance of approximately 245 li . Several Ford motor trucks have beem bought from the Hudford Garage, Dodge and Seymour (China), Ltd., for operation over the highway. This will be China's first highway built solely by merchants.

It is possible to magnetize a file by taking about a dozen turns of a strand of cord to which a lighted electric bulb is attached. This will give enough magnetism to the file to permit of its use for picking up small parts, screws, nuts, etc., that have fallen into inaccessible places.

A satisfactory compound for coating both the inside and outside of tires is made by stirring five pounds of whiting into a quart of gasoline and after a thorough mixture has been obtained adding a quart of rubber cement.


Talue in a motor car is determined by the service returned on the investment. For this reason the Auburn Beauty-SIX, in everyday transportation, business or recreation, holds such a firm position in the moderate
price class. There's an added value, too, in the twenty years' experience of the Auburn builders.
Auburn Beauty-SIX in Five Moodels: Touning, sedan.
 Tourster and Roadster.

## THE $\mathbb{F R} A N C O-A S I A T I C$ TRADING CO.

95 RUE MONTAUBAN, SHANGHAI, CHINA
EXCLUSIVE AGENTS FOR CENTRAL AND NORTH CHINA


The German Mercedes
shouring ferculiar borly
eonstruction

WTATEVER one may think of the Germans and of Germany, it is important to be well informed as to the progress in automobile design made by that ccuntry. One should, if possible, frofit by the experience of a competitor, or an enemy.

Of the cars emanating from Germany before the curtain of war dropped upon the scene, none was more admired than the Mercédès, the name of which alone was a word to conjure with in the far away days when motoring begem. The latest design is a six crlinder machine rated at $2 \times-95$ h.p.-a rating amply justified by the appearance of the engine when the nood is raised. Of decidedly complicated appearance, with cylinders cast in pairs and overhead valves and camshaft, this engine yet retains sorrething of the original characteristics of this particular make, while the lessons learned by its makers during the manufacture of airpiane engines, together with those resulting from the success of the Mercédès cars in the 1914 Grand Prix race, are indicated by the general arrangement that is followed.

To commence with, the camshaft is diven by bevel gearing encased ahead of the engine, but the valves are at an angle to the cylinder axis and operated through rocking levers. Then there are two carbureters, allieged to be the German version of the Zenith, to which instrument they bear not the slightest resemblance. For each carburetor there is a hot and cold air supply arranged by carrying the intake pipes across and through the crank case to junction pipes, of which one connects with a muff round the exhaust pipe, the other communicates direct with the air, but has its outlet corered by a disc controlled from the instrument board. No such thing as a vacuum tank finds place on the chassis; instead one sees an old acquaintance-the exhaust pressure-feed system, with its familiar regulating valve. As formerly, huge brass-bound exhaust pipes protrude aggressively from the side of the bonnet on their way to the silencer, before which is a very large cut-out. Oil is fed under pressure through a regulating valve to the crankshaft
bearings of which there are four, and, presumably, also under messure to the big-ends.

The body is handsome, finished in polished wood, with the panels built up of strakes set lengthwise. The aluminium hood is finished to look like wood. On the foothoards is a large pump to lubricate the transmission bearings. The British $f$ rice of the car is $£ 3,500$.

## DUNLOP INCREASES CAPITAL

## Extraordinary General Meeting Held in London-Future Prospects Bright

The capital stock of the Dunlop Rubber Company, Ltd., was increased to $£ 20,000,000$ by the creation of 12,500,000 additional shares of common stock at $£ 1$ each at a recent extraordinary general meeing of stockholders held in London. The matter of capitalising $£ 7,500,000$, consisting of premiums received on shares issued by the company, and of undistributed profits standing to the credit of the reserve fund were also distributed.

The new factory of the company being built in the United States at Buffalo was announced as nearing completion. The invasion of the American market has already begun. Other extension projects were reported as to be well under way and the future prospects for the company exceedingly bright.

## FAGEOL HAS PLANT IN CLEVELAND.

The Fageol truck, which has been built at Oakland, Cal. . for the past three years, is now being manufactured in Cleveland, Ohio as well. This plant was established largely because of the difficulty experienced in shipping the truck from the Pacific coast.

The Fageol Motors Co. of Ohio is headed by F. R. Fageol, founder of the California company. Associated with him are Calvin Eib, vice-president; I. H. Crow, S. E. Hutton, secretary and treasurer of the new company; and 1. E. Jurs general süperintendent in charge of production:

# Prest-O-Lite 



## Here's your assurance of sure starts and bright lights

W
HEN your car is equipped with a Prest-O-Lite Storage Battery you get more than a battery; more than a mere accessory to your motor car. Every Prest-O-Lite Battery is the company's pledge to the car owner of a positive and efficient starting-and-lighting service.

Prest-O-Lite Service begins to work for you from the moment you press your starter, or switch on your lights, for the first time. Prest-O-Lite Service is with you wherever you go ; you find it waiting for you and always ready to respond
to your starting and lighting requirements - in numerous cities towns and villages throughout the world. When you buy a new car, remember that a Prest-O-Lite Storage Battery as standard equipment is proof that the manufacturer has given the 'most careful thought to satisfactory starting and lighting service.

If your present battery needs replacement, remember there is a powerful Prest-()-Lite stomage Batterw of comed sizo and capacity for overy make and model of antomotile

Branches and Agencies in all Important Cities of China and Abroad Exclusive Agents in China for PREST-O-LITE COMPANY, INDIANAPOLIS, IND., U.S.A.

## THE LITTLE THINGS ABOUT YOUR CAR.

It is tho little things about your motor (ar that comut just as it is the little things in your business that ulten causo your hest latid plans to go ast raly.







 If the lime io beft on the iren or stex maly be kipt loom dilat alancel imdefinitels



 1:414.


 he patheng with a mixture of six purts wowl tar and twide bats resin. Thees ingredionts are melted together in an ircn ketule, after which eight parts of finely powdered brick dust are stirred in. The surfaces are first thorongly cleaned and then amine with this mixture wam.

Cloth minolstery may best be cleared hy beating curtains and backis light! with it stick or carpet beater, after which the accumulated dust is whisked off with a brush. (irease or oil may be removed by an application of lukervarm water and castile soap, applied with a woollen choth. There are a number of new wcollen cleaners which will work very well on cloth upholstely, hut gasoline and benzine have a tendency to spread instead of to remove dirt.

To paint the exhaust pipe requires a compound capable of resisting a high degree of heat. I se two parts of blak oxide of manganesc, three parts of graphite and nine parts ni Fulter: esth, thonghty moxed and added to which is ten ghatho of sodium aticate, ane part of eglacose and fiur quarts of water, until it is of the consistemer that emables it to be appled with a buris.

When washag the car demil curn the lose directly on the wheel: or body miless the winer prewure is ery low. Iressure usuatly hail up the nezzle is sutncient to mar the paint of dishaten it where the water is forlioh! dashed against the surtace. The best way is to use a lail of water and a sponge. Then much gentler treatment of the paint will result. Always he sure the sponge lised is free of grit or dirt, which might scratch the finish if rubbed over it.

Each month on this page will be published little things about your motor car that you should knowoften, knowledge that will save you repair bills.

1 : light wohle ons the axle wili son wear the ker or kes -at of the sar wheele into a dangerons condition. The onl? wil! of preventing the development of this condition is (1) estre the wheds frement insepetions for slackness.

In making leparss on the inside of a celluar radiator

 likely to start more joints leaking, so that the radiator is "ome alter be gets throwh than it was in the first place.


Nohair tops should be cleaned frequently by dusting off and lerushing briskly with a stiff brush. On the other hand Pantasonte topis ane best cleaned with a sofft brusla dinりed in water in which is a little ammenia, after which tiu- L.op Ak wh? lee rubled dir. Jomtasate cuntains may be freat in the alme wa? I fo not use gatsoline or kerowne to clean the tops.

After having slipped the cotter pin into place, do not hend the ends cver flat against the bolt or rod. "It isn't necessary to do this, because the cotter will lock just as securely if the ends are spread just enough to prevent slipping out. When the ends are bent considerablr, it is harder to straighten them sufficiently for later removal of the pin, and, further, the ends are very apt to break off when the part is in service, with the very probable result that the ill-treated cotter will slip out. Thus, instead of excessive end bending being an effective locking means, it is in reality no lock at all.

Skiddng or locking the brakes and sliding the wheels caute semel:s damage both to the truck's mechanisim and the treads of the tires. Imivers should be taught that their truck. will stoj yuicker it brakes are applied gradually. Improperly atjusted brakes will sometimes callse one wheel to lork, resulting in a section of the tire being ground or torn off. Is won ion a truck starts to skid it should be steered if possible in the direction of the skid. Abrupt turning of corners has the same effect as skidding, increasing the strain and wear on the tires.

A knock difficult to locate is sometimes caused by one of the pistons tonching a shoulder in the top of the crlinder hecallse the packing between crlinder and crank case has heen worn thin. Obriously a thicker packing will cure the trouble.


## AND THE PRlCE lS MODERATE

The Overland 'Touring Car or Roadster is moderate priced for a completely equipped car of recognized quality:

Moderate first cost, however, is only the starting point of Overland economy. Owners tell us that the low upkeep expense of the Overland is surprising.

The car was designed for upkeep economy. It weigh: only 1.800 !bs. Light weight and triplex suspension springs result in uniformly low gasoline and ,il consumption and high tire mileage.


The Overland is the car for all-round service. It is comfortable to a degree, especiaily on bad roads. It has stamina-recently a stock car was driven $5,+52$ miles continuously over country roads in 168 hours, and finished ready to start again.

There is real value for money in every dollar of the purbate price in amy onle of the four models: Touring, Roadster, Seclan, or Coupe. Let us demonstrate one-it carries mu whligation.

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"Boost for Good Roads in China."

## THIS IS ALSO A MOTOR CAR

## New Franch Effort for Low Priced Vehicle Brings Novelties



Ther latest Fremele effort to produce a cheap allomolile is a highly original slesign replete with features uf anuswal interest. It diffors from the ordimur! "1ntomubil, in almosi ecery particular. Radiator and engine are placed at the rear, the frame is of wood and its design is peculiar, while the mounting of the front spminyss is y,it, neus. The engime is a two-cylinder watercooler motorcigcle type with a loneycomb radiator mounted alongside the cylinders. Thermo-syphon cooliny is used with sepmrate enmertions to eache cylinder. lingime. rlutche amd transmission are mounted on. "yolied freme.e. the front of the yoke being swiveled on the woond firame. Ther construction is such that the penerer plent and rear arrle form " rigid unit, driving torque strains b, iny transmithed thens!lh this golic firame member. Intalie rallos are op,ratril li!g rowlire arms. The rear springs are full antilever tpye while the front springs are semi-elliptic, placed
 1. This wni, wiclion furmits ther use of lon! springs with !!rat freedom of action. The transmission is a three-speed type

## BRITISH PRICES ARE REDUCED

## Motor Makers Cut to Stimulate Falling Market

The recent sham, in the T"nited state motor car market, which hrought about the genetal frice cutting initiated by Mr. Henry Ford, is paralleled liy 1 resent conditions in the motor trade in Great Britain.

Even duing the days when the dem:nd was laisk British manufacturers were handicarped by capital reguirements and labor troubles. this providing is reads market at the time for all the American motor cars that could be obtrined from the U'nited states, hat now both: manufacturers and importers are in trouble through the refusal of the public to pay present prices and the inability of the banks to make furthor adrances.

The annomsement of the reduction in the pirce of the Ford car in America to practionlly the pre-war level was: : bombshell for the trade on both sides of the water. Messur: Harper, Bean, Limited, the huge British motor combine of Dadler, anmomed rery shortly afterwads: a substantiol reduction in the price of their cals: and athers have folloneed, among the larger cats being the Tauxhati.

Another interesting annomement is that the (iamen Engineering Companr, of London, have succeeded in producing a small two-seater car for $£ 100$. This car is seven to eight horse power and is less than halt the price of a sidecar combination of the came power.

The defression of the British market has undoubtedly been accentuated hy the flood of imports from foreign countries, chiefly America, where the slump in the domestic market made it possible for manufacturers to fill British orders, placed on the strength of a starved market, with a sudden and unexpected frompthes which completely
upset all calculations. During August imports of touring cars and commercial vehicles totalled 3,438 , as against $\check{0} 04$ in August, 1913, whilst the number of chassis was 1,526, as against 679 in 1913. Notor cycles also show a large increase, the number imported in August, 1920, being 684, whereas in the same month in 1913 only 80 were imported.

An official statement issued by the United States Gevernment shows that, during the first eleven months of the present fiscal year, Great Britain took over $\$ 5,500,000$ worth of commercial motors, as against $\$ 2,500,000$ worth in the preceding year. The same report states that the total number of commercial cars exported from the United States was 21,000 , as comprated with 11,000 in 1919, whilst passenger cars reached 103,000 , as against 33,000 in 1919. On the other hand, exforts of British touring cars and commercial vehicles show a decline, the figures for August, 1913, l, eing (ilu, but only 514 in August, 1919.

The British industry is at present specially complaining af two particular forms of competition. One concerns the large number of re-conditioned war lorries which are being imported in large numbers from Italy, and which can be obtained on very favorable terms owing to the rate of exchange. The second concerns the importation of American farm tractors. Duing the war the British (iovermment imported this class of tractor, as manufacturers themselves had no chance to deal with the demand, but it is reported that a protest is to be made to the Government that the British industry shall have a chance to establish themselves on a firmer fombdation.

A standardised, moderate-priced, English Car of $16-20 \mathrm{~h} . \mathrm{p}$. expressly designed to meet the needs of the owner-driver.

Low Petrol Consumption an Outstanding Feature Manufactured at Ayiesbury in Buckinghamshire Specifications and Price on application to Sole Agents:
The Shanghai Horse Bazaar \& Motor Co, Ltd.


A Panorama of the Entire Ford Plant

THE NLIIE "FORD" and the motor car which bears its name has come to be a household word not only in the United States but all over the entire world. In prats of China where the motor car finds its greatest difficulty here is the Ford doing daily efficient service. It has spread into the highways and byways of all countries into the most inaccessible spots and in many places "Ford" means motor car.

All of this has been made possible by the vision of Henry Ford and his associates who have builded the greatest motor car factory in the world at Detroit, Michigan. Here mass production has been brought to its highest degree of efficiency and $1,000,000$ cars are being given to the world annually.

The Ford factory is of world interest not only from this standpoint but from its principles of shop practice, sociological work and its profit-sharing plan. Many foreign dignitaries while in the United States have made trips to Detroit for the sole purpose of inspecting the factory and its methods. As many as 17,241 visitors have been entertained at the works during a single month.

Only by means of a personal visit to the vast Ford plant in Detroit can an adequate appreciation of the magnitude of the operations be gained. A plant with such an enormons
production is beyond the ken of the Far Eastern mind where large manufacturing institutions employ hundreds as compared with the thousands in the Ford industry.

In crder to obtain an intelligent conception of the magnitude of the plant as a whole, the entire Detroit property comprises a plot of ground containing 276 acrestranslated into C'hinese land measurement, 1,380 mon-with 47.5 acres of floor spaces actually under roof. The annual business of the Ford Notor Company approximates $\$ 400,000,000$ gold which means that each acre of floor space produces at the rate of more than $\$ 8,000,000$ annually.

The average number of employees is approsimately 60,000 on the factory payroll at one time. Fifty-three nationalities, speaking more than 100 languages and dialects, are to be found in the Ford shops. The wages and share of profit of the factory employees at the present time averages $\$ 7,500,000$ gold a month.
The Administration Building, to which all visitors come first, is on Woodward Avenue. This is a four story structure and contains the general cffices of the company. It is 300 feet long and 55 feet in width. The average number of employees on the salary roll is 900 , averaging at $\$ 82,000$ a nonth, exclusive of executive and department managers.

## HE AMERICAN FORD FACTORY



Juit north of the Administration Building is the new power house which supplies the motive element for the entire factory: In the construction of this building 5,200 tons of structual steel were used, the equivalent necessary 10 build a modem 20 story skyscraper.

Six engines of a combination gas-steam type, housed in this building, develop 36,000 combined horsepower. These ware designed by engineers of the factory and are the first practical ones of their type. The total horsepower of the plant, including several other engines, is 45,000 . The factory consumes 22 tons of coal an hour and 29,512,000 cubic feet of power gas per day.

The main fartory buildings are entered from the Administration Building through a private garage of the combuny. Theon buikdinge are 900 feet long and soo feet wide, fome stones in hemeht and of fire prosel construction. 'They arosonderined that every part of the interior receives a full :hate of davioght.

The heating and ventilating of the factory buideng is aceomphistrad in it modern, scemtife mamor. In the winter, warm washex air is fored through long deces in the flowe up into the roons. In the summer, cooblair is handed in the satme way.

Tmagine that gon are in the Ford factory, samomdad by the lum :and throd of eper ding machimers, the industr?
and wystematic labor of 60,000 or more men, every man a specialist on his work.

At the right as one enters the factory is the tool construction department, with 1,000 expert tool makers, machinists and die sinkers, engaged in making new machencry, topating old, adjabing tools, jigs and fixtures.
 Overinead ane traveling crancs of 10 fons capracily calch of handle machines and pats. Next is the fatory oftiee where Mr. Ford confers daily with the superintendents of the vargons departments and th? in forn contor with the foremen.















The maze of belts and machines in the crankshaft grindin) department
casting is started in a department at one point, and after passing through the machines doing the requirel oremations, it leaves this department in a finished condition, ready to be assembled into the car. Such it system neconsitater the grouping together of many different kinds of machines, as well as including brazing furnaces and other sperial unitw (most generally found in separate buildings). Chutes run from one machine to another, on that a workman can transport a part from his operation to the next one by gravity The results of thas transpertation system are remarkible, making a big saving in trucking expense, lus of material and the absence of usual delays.

As one passes down through the machine shop, he particularly notices the sanitary conditions of the plant. There is a department, cmolling about sot men, whose


Cylinder machining depurtment
duties are to keep the floors sitcpit chan, the windows washed, in fact to keep the sanitary conditions surrounding the workmen as memly perfect as possible.

To facilitate the inter-departmental transportation of materials in the factory, there is an overhead monorail sritem, combaising cuer $1 \frac{1}{2}$ miler of I-beim thack. On this s.tem are nine moncrail cars, each car having two 2 -ton heiste, loy means of thich geat loxes and trays of material (all be picked und anded overhend from point to proint in the shop.

After leaving the superintendent's office, a turn to the right bings one to the laymaster's office, where each emploree of the factory receives his pay every two weeks. In this comection it is interesting to note that in the Ford factory every day is pay-dix. The number of employees is so large that it would be quite impossible to pay them all in one day, so each man is classified by letter and number, each group having its own pay-day.

Near the pay office is the main First Aid Hospital. Here the chief surgeon has on his staff regular doctors and several first aid nurses. The surgical equipment of this hospital, which includes and X-ray machine, pulmotor, operat. ing table and electrical appliances, as well as improved suggical instumento emal!es the smgeon to cope with any accident. Adjening the main first aid station and examining room, is the Employment office. Besides niring men, this office is a clearing house for Ford empioyees, and all transfers and discharges are handled through it. The Factory Service office houses a department which is responsible for the well-being of factory employees. Of the 200 men in the division, the majority are employed in the capacities of watchmen, to take care of the many entrances and exits of the plarit and also to inspect the fire-fighting equipment which is distributed over the entire plant.

This fire-fighting equipment is being continually atded to as the frant expands and mow embraces more than a mile anu al half cf large hose, 10, , mo feet of smaller lose, and $\because, 000$ feet of hose attached to chemical tanks. There are 1,421 threc-gallon chemice:! extinguishors and fifty-eight 40-gallon chamica! taniss, mounted on wheels. Surrounding tise plant are twenty-sieven water hydrants equipped to hander two and theo lines of hose, while inside the phant are cight lies-howes fully oquiped. I'yenes to the momber of 175 are distributed about the depatments for combating electrical fires. In addition to its other duties the Factory Service deparment las charge of the lost and fombd articles. Sinee this work was included, almost every sont of personal preperty, from key-rings to notor-cyeles, has been found and restored to the rightful owners.

Proceeding from the Factory Service office, the visitor finds himself in the main crane-way, devoted exclusively to the storage of $\mathrm{l}^{\text {ants }}$ in the rough, or semi-finished, condition. This crane-way contains over 67,000 square feet of floor pace. Overhead are two 5-ton electric cranes, so arranged that they can unload material from railway cars at one end of the crane-way and deposit it in a position to be picked up by the monorail cars, or placed in bins or barrels for stcrage. In the crane-way will be noticed a number of inspectors, who are gavging and testing various parts and materials.

Passing by the crane-way one comes to the rear axle unit assembly. The manufacturing policy of the company is to make unit assemblies in different departments and deliver them to the Final Assembly. This is one of the metloods which has emalled the man factory, and its van ious bronch assembly plants, to assemble and ship over 2,500 finished cars in a day of e hours.

In the mit assembly departments are received tho finished narts from the machine shop. These parts are ansembled on prgese ivo traveling tracks. By this system


Giving the mentor block terst
cach assembler, or operator, performs one operation only, and repeats this operation (in cevery unit passing through the department. After the roar axle has been completely assembled, it is immersed in a tank containing enamel, and is hong on a specal trolloy which hms he gravity along an I-beam track. This trolley carries the axle to an elevator which lifts it to a conveyor baking oven, located in a section of the roof. The axles are continually moving through this oven and at the expiation of alout 4.5 minutes emerge from another ond completely baked. They are antomatically dropled onto another elevator which lowers them to the point near where they are used in the final assembly

Begend the rate axde section is the magneto department that makes the ee parto of the epecial Ford maseneto and aloo that in which tamsmierion is arexmbled on a conver or


Issembliuty the molar from purts.


Each part drops into its place in the final assembly
track, ending in an antematic elevator which transports the completed transmission to the Motor Assembly line.

In the rear of the Trammission deyatment is the Motor Assembly. This assembly begins at the point where the cylinder machine shop ends, so that the movement of the sylinder fnom the time it arrives in the machine shop unill it goes into the finished motor, is crnimuons. The fimal operation in the motor assembly line is the block test, where the moter is inspected and tested before being assembied into the deriesis. ()n the block test, the metor is driven by an chectice motor for the final a. k. . and tryout before being installed in the chaswis. It the end of this testeng period, if no defect has developed, the motor is approved, placed uphen a spectial trick imd wheeted to the Final S-cmbling


The installation ef the mentur
line. The assembling of the front axle, dash and radiator are fully as interesting as the unst just descritiod, but space will not permit a detailed explanation of them. Perhays
the most interesting department in the whole factory, to the visitor, is the Final Assembly. In this division, all the assembled units meet the assembly conveyor at the point where they are needed. At the start of the track a front axle unit, a vear axle unit and a frame unit are assembled. This assembly is then started in motion by means of a chain conveyor, and as it moves down the rocm at a constant speed of 8 fret per minute, each man alds one purt to the growing chassis or does one operation, which is assigned to him, so that when the chassis reaches the end of the line, it is ready to run on its cwn power.

In following the Final Assembly line from the point where the chain conveyor engages the frame and axles, the visitor is impresced with the dispatch with which every movement is executed. The gesoline tank, for example, cones dewn firm the fourth floor on a converar cutvide of the building, and draps through a chute onto a boidge over the assembly line. On this bridge is located the gasoline pump from which a.wh tank receiver one gallon of gats lino before it is installed in the calr. After the tank is added smaller paits fit into their places, such as fender irons, gasoline feed pipe, etc.. intil the point is reached where the motor is placed in the frame.

Placing the motcr in the frame is ordinarily a long process but in this assembly the motor is elevated by a hoist and lowored into place while the chassis is moving along the conteror track. Following this smalle parts are added until the car reaches the bridge where the complete dash unit comes from a second floor to take its place. Now the exiaust pipe, muffler and side pans for the motor are quickly fastened on and the wheels enter for their part,


At the end of the essembly line, the rear wheels cn the finished chas-is drop into a set of serolving gate wed whels. sunk into the concrete floor and diven by an overhend motor. When the wheel of the ar revolve with the onorod wheel. this motion is transmitted to the differential, through the drive shaft to the motor, limbering up all these parts. The
 switch is turned on and the motor started.

At the end of the line the complete chassis is driven out

























Practically the entire first floors are used as a Receiving department, where all the material consigned to the Combant is checkive and infoctet. Ratilway thacks win the full length of both crane-ways, facilitating the unloading and loading of supplies and parts.

The Body department occupies the greatest amcunt of space, requiring, with the Cpholstering department, most of the three upper flocrs. In addition to this work the construction of tops, curtains and radiators is carried on',











[^50]
# PRICES AND SPECIFICATIONS OF AMERICAN PASSENGER GARS 






Moder Mator I nition situtim：

## AILEN


ALSAC

AMERICAN

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AUBUW ${ }^{4-3}$

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BOLR－DAVIS
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1920 4－33x5 Conn A－Lite 109 30x4 QD ．．．．． $12 \times 5$ ．．．．． 1885 IUUICK
K－6－44－476－33xth Delco Delco $118 \quad 33 \times 4$ SS 1595 1595 ．．．．．． 2165 K－6－49－50 6－33 $\frac{3}{2} \leq 4 \frac{1}{2}$ Delco Delco $124 \quad 34 \times 4 \frac{1}{2}$ SS CADILLAC
$\begin{array}{llllllllllll}59 & 8-3 \frac{1}{2} \times 5 \frac{1}{8} & \text { Delco } & \text { Delco } & 125 & 35 \times 5 & \mathrm{SS} & 39.10 & 13940 & 4090 & 4750\end{array}$ CAMERON

| 45 | 6－＊3 ${ }^{3} \times 1 \frac{1}{2}$ | Conn |  | 108 | $32 \times 4$ |  |  |  | 1700 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 55 | $6-2$ ¢6 $\times 1 \frac{1}{2}$ | Conn | Bijur | 118 | $32 \times 4$ | ．．． |  | 2000 |  |

$\begin{array}{lllllllll}\text { CASE } \\ \mathrm{V} & 6-3 \frac{1}{2} \times 5 \frac{1}{4} \\ \text { Delco Wstlis } & 126 & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & 2650 & 2650 & 37.50\end{array}$
CHALMERS
3．5－B 6－31 $\times 4 \frac{1}{2}$ Remy
CHAMPION
K．O． $4-3 \frac{1}{2} \times 5$ Delco Dyneto 116 32x31 $8 \mathrm{SS} \quad 1.550 \quad 1.50$
CHANDLER LER
$6-3.5 \times 5$
CHEVROLET
$490 \quad 4.33_{16}^{11} \mathrm{x} 4$ Remy A－Lite $102 \quad 30 \times 3 \frac{1}{2} \quad 795 \quad 820 \quad \ldots \ldots 51375$

CLEVELAND
$\begin{array}{llllllll}6-3 \times 4 t \\ \text { GidD GitD } & 112 & 32 \times 4 & \text { SS } & 1335 & 1335 & \ldots . . & 21.5\end{array}$
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59－A 8－33x5 Delco Wisths $132 \quad 35 \mathrm{x} 5$ \＆s 162.50 ＊62．50 62.50 CYCLOMOBILE
DANIELS

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DISPATCH
G
DIXIE FLYER 4－3is5 Conn
DODGE BROTHERS
6－80 $4-3 \bar{j} \times 4 \frac{1}{2}$ N．E．
DORRIS

| $6-80$ | $6-4$ | $\times 5$ | $B o s c h$ | Wsths | 132 | $33 \times 5$ | $\$ S$ | $\ldots .$. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $47.50 \quad 47.50 \quad 5720$

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DUPONT ${ }^{4-3 \frac{1}{2} x 5}$ Bosch Wisths $105 \frac{1}{2} 30 \times 3 \frac{1}{2} \ldots$ IC ； 108.5
$4-3 \frac{15}{6} \times 5 \frac{1}{8}$ Eisman Wisths 124 32x42 SS ．．．．．．$\dagger 4000$

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$\begin{array}{lllllll}6-35+5+\text { Own } & \mathrm{I}-\mathrm{N} & 130 & 32 \times 4 \frac{1}{2} & \mathrm{SS} & \ldots . . & 3675 \\ +3675\end{array}$


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$\begin{array}{lllllllll}\text {（i．40 } & 6-3!\times 5 & \text { Wisthis Wrsthes，} 119 & 32 x & \text { SS } & 169 ; & 1695\end{array}$
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$\begin{array}{llllllllll}22 & 6-32 x 4 \\ 2\end{array}$ HANDLEY．KNIGITT
A－Lite $12532 \times 4 \frac{1}{2}$ SS
$\begin{array}{lllllllll}54 & 6-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Delco } & \text { Delco } & 121 & 32 \times 4 & \text { SS } & 2365 & 2365 \\ 54 & \ldots . . & 2885\end{array}$
HARROUN 106 A． $30 \times 3 \frac{1}{2} \ldots .+1095995$

| A－1 | $4-3 \frac{1}{4} \times 5 \frac{1}{2}$ | A．Kent Kemy | 106 | $30 \times 3 \frac{1}{2} \ldots$ | +1095 |
| :---: | :---: | :---: | :---: | :---: | :---: |


$\begin{array}{lllllllll}42 & 4-3 \frac{1}{4} \times 5 & \text { Conn } \\ \mathrm{HA}^{2} & \text { Dyneto } 115 & 32 \times 4 & \text { SS } & \ldots . . & 1695 & +1695 & 2595\end{array}$ | 4.5 | $6-3 \frac{1}{2} \times 5$ | KingstonL－N | 132 | $34 \times 4 \frac{7}{2}$ | SS | +3185 | $\ldots . . .$. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $46 \begin{array}{lllllllll}46-9 & 12 \\ 4 & 55 & \text { Delco } & \text { L－N } & 132 & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots \ldots . & +3450 \\ 3450 & 4200\end{array}$ HOLLTER

206－B $\quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Remy Wsths 120
$33 \times 4$ HOLMES
$\stackrel{1}{H U D S O N}^{6-3 \frac{1}{2} \times 4 \frac{1}{4}}$ Holmes Dyneto $126 \quad 34 \times 4 \frac{1}{2}$ SS $\ldots . .{ }^{1}+3050 \quad 3100 \quad 4000$ Snper－6 6－32 $x 5$ Delco Delco $125 \frac{1}{2} 34 \times 4 \frac{1}{2}$ SS $\ldots .$. HUFFMAN ${ }^{2}$
$6 \cdot 3 \frac{1}{1 x} 4 \frac{1}{2}$ Conn Dyneto 120 32x 4 SS 19951995
$\begin{array}{llllllll}\text { HUPMOBILE } \\ \text { R－3 } & 4-3 \frac{1}{4} \times 5 \frac{1}{2} & \text { A．Kent Wsths } & 112 & 32 \times 4 & \text { SS } & 1760 & 1760\end{array} \ldots \ldots .2600$ JACKSON
JONES $\quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Re：ny A－Lite． $121 \quad 33 \times 4 \quad$ SS $\ldots \ldots . \quad 2150+2885 \quad 3650$ 6－28 6－312 $\times \frac{1}{1}$ A－Lite A－Lite 126 34x4 QD 2750 JORDAN
 KING 6－3 $\frac{2}{4} \times 4 \frac{1}{2}$ Delco Deleo $120 \quad 32 x 4$ SS $2650 \quad 2650$ ．． KING

| H | $8-3$ | x 5 | A．Kent Wisths | 120 | $32 \times 4 \frac{1}{2}$ | SS | 2750 | +2735 | 2725 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 4235 KISSEI KAR

rustom Ruilt $6-5 \frac{1}{5} \times j \frac{1}{2}$ Remy Remy $\quad 121 \quad 32 \mathrm{x}-1 \frac{1}{2}$ SS $\quad 3475$＋3175 3175 ＋3975 KIJNE
$6-55-\mathrm{T} \quad 6-3 \frac{1}{2} \times 4 \frac{1}{2}$ Conn Wagner $121 \quad 33 \times 4 \quad \mathrm{SS}+2265 \quad 2290$ †2265 $\quad 3190$ LIMANざE
LAFAYETTE


LEXINGTON
S 6－3 $\frac{1}{4} \times 4 \frac{1}{2}$ Conn G\＆D $120 \quad 32 \times 4 \quad \mathrm{SS} . \ldots . . \quad 2235$＋2285 2795
LIBERTY

$\begin{array}{cccccccc}10-C & 6-3 子 x \geq 1 \\ \text { LINCOLN A．Kent Wagner } 117 & 32 x-4 & \text { SS } & 1795 & 1795 & 1885 & 2850\end{array}$ | $8-33 \mathrm{x} 5$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | LOCOMOBILE

48 fi－4 $4 \frac{1}{2} \times 5 \frac{1}{2}$ Berling Wisths 1.12 3．5x．5 SS +7650 ．．．．．． 755010000 LORRAINE
$4-3 \frac{1}{4} x .5$ Conn Wisths 114 32x4 SS ．．．．．． 1575
McFARLAN
$\begin{array}{llllllllll}127 & 6 \cdot 4 \pm \mathrm{x} 6 & \text { Wisths Wisths } & 140 & 35 \mathrm{x} 5 & \mathrm{SS} & 5300 & +5100 & 5100 & 6400\end{array}$ MADISON

MAIBOHM
B 6－31 $x 4\}$ A．Kent Bijur 116 32x4 $\operatorname{SS} 14751475$ ．．．．．． 2235 MANEXAL
MARMON $2-3 \frac{1}{2} \times 3$ A．Kent $\ldots . .102 \quad 102 \times 3$ C 475
$\begin{array}{llllllllll}34 & 6-3 \frac{3}{4} \times 5 \frac{1}{8} & \text { Delco Delco } & 136 & 32 \times 4 \frac{1}{2} & \text { SS } \dagger 5000 & 5000 & 5000 & 6600\end{array}$

| Model | Motor | Ignition | Starting Lighting | WB | Tires R | Rims | $\stackrel{2-}{\text { Pass. }}$ | $\begin{gathered} 5- \\ \text { Pass. } \end{gathered}$ | $\stackrel{7-}{\text { Pass. }}$ | Sedan | Model | Motor | Ignition | Starting <br> Lighting | WB | Tires | Rims | $\stackrel{2-}{\text { Pass. }}$ | $\stackrel{5-}{\text { Pass. }}$ | $\begin{gathered} 7- \\ \text { Pass. } \end{gathered}$ | Sedan |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MAXW | ELL |  |  |  |  |  |  |  |  |  | PILOT |  |  |  |  |  |  |  |  |  |  |
| $25$ | 4－35 $\times 4 \frac{1}{2}$ | A．Kent | Simms | 109 | $30 \times 3 \frac{1}{2}$ | C | \＄99．5 | \＄995 | $\ldots$ | \＄1695 | $6-45$ | $6-3 \frac{1}{8} \times 5$ | Delco | Delco | 120 | $32 \times 4$ | SSt | \＄1940 | \＄1895 |  | \＄2900 |
| MERCE |  |  |  |  |  |  |  |  |  |  | POR＇TIS |  |  |  |  |  |  |  |  |  |  |
| $\stackrel{5}{\mathbf{M}^{\prime}} \Gamma \neq$ | $44-3 \frac{3}{4} \times 6 \frac{3}{4}$ | Berling | Wsthis | 132 | $32 \times 4 \frac{1}{2}$ | SS | 3950 | ＋3950＊ | \＄3950 | ．．．．．． |  | $-4.6 \times 6 \frac{3}{4}$ | Berling | Wsths | 142 | $35 \times 5$ | SS | ．．．．．． | ＋9200 | \＄9400 |  |
| Master． | 6 6－31 ${ }^{1} \times 5$ | Conn | Wsths | 120 | 32x4 | SS | ${ }_{+}^{\dagger} 1995$ | 1995 |  | 2895 | 6－D | 6－33 $\times 5 \frac{1}{3}$ | Delco | Delco | 127 | $32 \times 4 \frac{1}{2}$ | SS | 4600 | $\dagger 4600$ | 4600 | 5800 |
| MITCH | ELL |  |  |  |  |  |  |  |  |  | 1 L \＆V | NIGHT |  |  |  |  |  |  |  |  |  |
| E 40 | $6-3 \frac{3}{4} \times 5$ | Remy | Remy | 120 | $33 \times 4$ | SS | ＋1750 | 1750 |  | 2900 | R | 4－3 $\frac{3}{4} \times 5$ | Wagner | Wagner | 115 | $32 \times 4$ | QD |  | 2350 |  | 2900 |
| E－42 | 6－31 ${ }^{6} \times 5$ | Remy | Remy | 127 | $34 \times 4 \frac{1}{2}$ | SS |  |  |  |  |  | 6－32 $\times 4 \frac{1}{2}$ | Wargner | Wagner | 127 | $32 \times 4 \frac{1}{2}$ | QD | 33.50 | 13350 | 3350 | 4000 |
| MOLLE |  |  |  |  |  |  |  |  |  |  | REO |  |  |  |  |  |  |  |  |  |  |
| MONI' | $4-23 \times 4$ $\mathrm{OR}$ | Eisman | Dyneto | 100 | 28x3 | ．．． | 1100 | $\dagger 1150$ | ．．．．．． | ．．．．．． | $1920$ | $3-3 \frac{9}{16} \times 5$ | N．E． | N．E． | 120 | $33 \times 4$ | SS | ${ }_{+}^{+1850}$ | 1850 | $\ldots .$. | 28.50 |
|  | $6.3{ }^{3} \times 4 \frac{1}{2}$ | Djneto |  | 121 | $33 \times 4$ |  | 2475 | 2475 | 3475 |  |  | 4－4 ${ }_{8}^{3} \times 6$ | Bosch | lisths | 131 | $32 \times 4 \frac{1}{2}$ | SS | 4850 | 46.50 | †46：0 | 6500 |
| MONRO | OE |  |  |  |  |  |  |  |  |  | ROAMI |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} \mathrm{N}-9 \\ \mathrm{MOON} \end{gathered}$ | $4-31 \times 4 \frac{1}{2}$ | Conn | A－Lite | 115 | $32 \times 3$ 古 | SS | 1440 | 1440 |  |  | C-6-54 | 6－31 $\times 5 . \frac{1}{4}$ | Bosch | Bijur | 123 | $32 \times 4$ | SS | 3175 | ＋3075 | 3325 |  |
| 6－48 | $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Delco | Delco | 11.8 | $32 \times 4$ | SS | 2085 | 1985 |  | 2985 |  | 4－33，$\times 5$ | Remy | Wagner | 112 | $32 \times 3 \frac{1}{4}$ | SS |  | 1785 |  | 2685 |
| 6－68 |  | Delco | Delco | 122 | $35 \times 5$ | SS | 2585 |  | 2485 | 3485 | SAYERS |  |  |  |  |  |  |  |  |  |  |
| MOORE |  |  |  |  |  |  |  |  |  |  | SIX－42 | －34 | Delco | Delco | 118 | $33 \times 4$ | SS | 2195 | 2195 | ．．．．． | 3295 |
| F | 4－3x5 | Conn | A－Lite | 108 | $30 \times 3 \frac{1}{2}$ | QD |  | 1175 |  | $\ldots$ | SCRIPP | －BOOTI |  |  |  |  |  |  |  |  |  |
| NASH |  |  |  |  |  |  |  |  |  |  | B－39 | $6-2138 \times 4{ }_{4}^{3}$ | Pemy | Remy | 115 | $32 \times 4$ | SS | ＋154． | 1545 |  | 229.5 |
| $\begin{aligned} & 681 \\ & \text { NASII } \end{aligned}$ | $6-3{ }_{4}^{3} \times 5 \frac{1}{4}$ | Delco | Wagner | 121 | $33 \times 4$ | SS | 169.5 | 169．7 | 1875 | 2895 | $\begin{aligned} & \text { SCNECA } \\ & \text { SEVERI } \end{aligned}$ | $\mathrm{N}^{4-38 \times 4 \frac{1}{2}}$ | Conn | A．C． | 108 | $30 \times 33 \frac{1}{2}$ | C | 1185 | 1185 |  |  |
| NATIO | $\begin{aligned} & 4-3 \frac{1}{4} \times 5 \\ & \text { NAL } \end{aligned}$ | Willard | Wanger | 112 | $32 \times 3 \frac{1}{2}$ | ．．． | 1335 | 1395 |  |  | SIIERI | $6-3 . \frac{1}{2} \times 5 \frac{1}{1}$ | Wagne | Wragner | 122 3 | $32 \times 4$ | $\ldots$ |  | ． 5.50 | ．．．．．． |  |
| $\begin{aligned} & \text { Sextet } \\ & \text { NELSO } \end{aligned}$ | $N^{6-3 \frac{1}{2} \times 5 \frac{1}{4}}$ | Delco | Wsths | 30 | $32 \times 4 \frac{1}{2}$ | SS | 3750 | 13750 | 3750 | 4953 | SINGE | $318 \times 5 \frac{1}{4}$ | Remy | A．Lite | 116 | $33 \times 4$ | SS | 1500 | 1800 | $\ldots$ |  |
| $\begin{gathered} \text { D } \\ \text { NOMA } \end{gathered}$ | $4-3 \frac{1}{k} \times 4_{4}^{3}$ | Bosch | U．S．L． | 104 | $32 \times 4$ | SS |  | 1700 |  |  | $20$ | $6-4 \times 5 \frac{1}{2}$ | Bosch | Wsths | 138 | $33 \times 5$ | SS |  | ＋5s．30 | 5800 | 7800 |
|  | 6－31 $\times 4$. | Delco | Delco | 128 | 31×4 $\frac{1}{2}$ | SS | 2800 | $\dagger 2900$ |  |  |  | 4－312 $\times 5$ | Conn | Wsths | 112 | $32 \times 3 \cdot \frac{1}{2}$ | SS | 1295 | 129．） |  |  |
| NORW | ALK |  |  |  |  |  |  |  |  |  | SPACK |  |  |  |  |  |  |  |  |  |  |
|  | $4-3 \frac{1}{2} \times 5 \frac{1}{2}$ | Delco | Dyneto | 116 | $32 \times 3 \frac{1}{2}$ | SS |  | 1385 | ．．．． |  | $5 \cdot 20$ | $-3 \frac{7}{2} \times 3$ | A．Kent |  | 90 | 28x3 |  | 29.5 |  |  |  |
| OAKLA | ND |  |  |  |  |  |  |  |  |  | STAND |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 34-\mathrm{C} \\ & \text { OLDSM } \end{aligned}$ | $\begin{aligned} & 6-22_{13}^{3} \times 4 \frac{3}{4} \\ & \mathrm{IOBII} \mathrm{E} \end{aligned}$ | Remy | Remy | 115 | $32 \times 4$ | SS | ＋1395 | 1395 |  | 2065 | I | 8－3 3 ¢ $\times 5$ | A．Kent | Wsths | 127 | $34 \times 4 \frac{1}{4}$ | SS |  | 13400 | 3400 | 5000 |
| 45－B | $8-27 \times 4 \frac{3}{4}$ | Delco | Delco | 122 | $33 \times 4 \frac{1}{2}$ | SS |  | ＋2045 | 2345 | 2950 | STANL |  |  |  |  |  |  |  |  |  |  |
| 37－A | 6－21．3 ${ }^{1 / 3} \times 4$ | Remy | Remy | 112 | $32 \times 4$ | SS | 1450 | 1450 |  | 2145 | Steamer | 2－4x |  |  | 130 | $34 \times 44$ | SS | $\ldots$ | 4000 |  | 6160 |
| OLYM | PIAN |  |  |  |  |  |  |  |  |  | ST．ANW | 0 OH |  |  |  |  |  |  |  |  |  |
| OVER | $4-3 \frac{1}{2} \times 4 \frac{1}{2}$ | Conn | A－Lite | 116 | $32 \times 3 \frac{1}{2}$ | ， |  | 1585 |  |  |  | $5-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Willard | A．Kent | 118 | $33 \times 4$ | SS |  | 2050 | $\ldots$ |  |
| 4 | 4－33x4 | A－Lite | A－Lite | 100 | $30 \times 3 \frac{1}{3}$ | QD | 89.5 | 89.5 |  | 1485 | $\begin{gathered} \text { STEAI } \\ \text { SKL } \end{gathered}$ | $-3 \frac{3}{4} \times 5$ | A.Kent | Weths | 12．7 | $34 \times 4 \frac{1}{2}$ | SS | $\pm+2475$ | 2450 | 267. | 34.50 |
| OWEN－ | MAGNE | TIC |  |  |  |  |  |  |  |  | STEPI |  | d．Kent |  |  |  |  |  |  |  |  |
| $\begin{gathered} \text { W-42 } \\ \text { PACKA } \end{gathered}$ | ${ }^{6-4} \times 5 \frac{1}{2}$ | Bosch | Own | 142 | $35 \times 5$ | SS |  |  | 7000 | 7500 | Salient | $\times 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ | A－Lite | A－Lite | 122 | $33 \times 4{ }^{1}$ | SS | 2403 | 12100 | ＊2400 | 3100 |
| 3－35 |  |  |  | （136 | $35 \times 5$ | SS |  |  | 16000 |  | S＇UUDEI | AKER |  |  |  |  |  |  |  |  |  |
| 3－25 | $12-3 \times 5$ | Delco | Bijur | $\{128$ | $35 \times 5$ | SS | \＄5200 | 5200 | －5250 |  | Spee．－6 | 6－32 $\times 5$ | Wagnel | r Wagner | 119 | $32 \times 4$ | SS | 1795 | 1795 | $+1795$ | 2－3．3 |
| PACKA | RD |  | Bijur | （128 | 55x |  |  |  |  |  | Big－6 | 6－3．355 | Wagner | Wagner | 126 | $33 \times 1 \frac{1}{2}$ | S |  |  | 2200 |  |
| New－6 | 6－33x4 ${ }^{2}$ | Delco A | ．Kent | 116 | $33 \times 4 \frac{1}{2}$ | ．．． | 2975 | 2975 |  | 4250 | Uight－6 | $6-3 \frac{1}{k} \times 4 \frac{1}{2}$ | Wagner | Wragner | 112 | $32 \times 4$ | SS | 14 |  | 30．） |  |
| PATGE |  |  |  |  |  |  |  |  |  |  | STU＇T／ | $4-43 \times 6$ | Delco | Remy | 130 | $32 \times 4 \frac{1}{1}$ | 1 SS | 380.9 | ＋392．） | 392. |  |
| $6 \cdot 42$ | 6－31 ${ }^{\frac{1}{4} \times 5}{ }^{\frac{1}{4}}$ | A．Kent | GdD | 119 | $33 \times 4$ | SS | ${ }_{+}^{+1770}$ | 1770 |  | 2645 | $\mathrm{H}$ | $4-4{ }_{8} 6$ | Dero | （1eny |  |  |  |  |  |  |  |
| 6－5．5 | 6－3 ${ }^{\frac{1}{2} \times 5 \cdot \frac{1}{4}}$ | A．Kent | G\＆D | 127 | $33 \times 4 \frac{1}{2}$ | SS |  | 2895 | 2895 | 3750 | ＇TГUPL |  |  |  |  |  |  |  |  |  |  |
| PARAG | GON |  |  |  |  |  |  |  |  |  |  | $4-3{ }_{4}^{3} \times 5 \frac{1}{2}$ | Bijur | Bijur | 118 | $32 \times 4$ | SS | 288.5 | 2Ns．i | 12885 | 3785 |
|  | $4-3{ }^{3} \times 5 \frac{1}{4}$ |  |  | 122 | $32 \times 4 \frac{1}{2}$ | SS | 3000 |  |  |  | VELIE |  |  |  |  |  |  |  |  |  |  |
| PAREN | N＇I＇I |  |  |  |  |  |  |  |  |  | 48 | $6-31 \times \frac{1}{2}$ | Bijur | Bijur | 11.5 | $32 \times 4$ | SS | 18．5．） | 185\％ | ．．．． | 2 （\％） |
|  | 6－3 $\times 4 \frac{1}{2}$ | Conns | Bijur | 123 | $32 \times 1$ | ．．． | $\ldots$ | 2000 | $\ldots$ | 3000 | 34 | $6-3 \frac{1}{8} \times 4 \frac{1}{1}$ | A．Kent | Wsths | 112 | $32 \mathrm{x} 33 \frac{1}{2}$ |  | ．．．．．． | 13が5 | ．．．． |  |
| PATER | iSON |  |  |  |  |  |  |  |  |  | W ESTCO | ${ }^{\prime} \mathrm{TT}$ |  |  |  |  |  |  |  |  |  |
| 6－50 | $\xrightarrow[5-3 \frac{1}{4} \times 4 \frac{1}{2}]{ }$ | Willard | Delco | 120 | $33 \times 4$ | SS | ．．．．．． | 2100 | $\ldots$ | 3300 | C－48 | $6-3 \frac{1}{2} \times 5 \frac{1}{4}$ | Delco | Delco | 125 | $32 \times 1+$ | SS | …… | 2990 | 2990 | $45\left(\begin{array}{l}\text { a }\end{array}\right.$ |
| PEERT | ESS |  |  |  |  |  |  |  |  |  | C－38 | 6－3 $\frac{1}{4} \times 4 \frac{1}{2}$ | Delco | Delco | 118 | 38 x 4 | SS | $\because 290$ | $2-940$ |  | 83390 |
| 56 |  | A．Kent | A－Lite | 125 | $34 \times 4 \frac{1}{2}$ | $\frac{1}{2} \mathrm{SS}$ | $\ldots$ | 13200 | 3230 | 4140 | WILLY | S－KNIG |  |  |  |  |  |  |  |  |  |
| P历TSM | 10NT | Remy | Remy | 122 | $32 \times 4$ | SS |  | 1945 |  |  | 20 | $4-3{ }_{8}^{5} \times 4 \frac{1}{2}$ | ．．．．．． | A－Lite | 118 | $3: 3 \times 1$ | SS | －219．7 | 219.5 |  | 291． |
| 4．30 | $3 \frac{1}{2} \times 5$ | Delco | 1）yneto | 116 | $42 \times 38$ | Ss | ．．．．．． | 1485 | ．．．．．． | ．．．．．． | WINTT |  |  | Wras |  |  |  |  |  |  |  |


 ＊ 6 －pansenger．$\dagger 4$－pasenger． 13 －passenger．




## haUl by Truck

# BRITISH MOTOR SPECIFICATIONS AND PRICES. 







December, 1920
NAPIER. 6-cyl. $102 \times 127$ 40-50 h.p. Chassis... THE ORIENTAL MOTOR

EWEY.
NEIVEY. 4-cyl. fi9 x 120 12-1\% h.p. Chassis ... ... 4 -seater Touring
NEW ORLEANS. 4 -cyl. $76 \times 16520$ fo.p. Chassis 4-seater Touring NEWTON. 4-cyl. $6.9 \times 14012$ h.p. Chassis 4-seater Touring ...
ORPINGTON. 4-cyl. 10-12 h.p. Chassis
2-senter
PALLADICM. 2-cyl. $89 \times 107$ 10) h.p. 4-5sater Truaning PARNACOTT. 2-cyl. $98 \times 98$ 12-20 h.p. 2-seater PERFEX. 22.5 Chassis

2 -seater ...
4 -seater
PHCENIX. 4-cyl. fij $\times 100$ 11.9h.p. Chassis 3-stater
PICHARISSON. 2-cyl. 85 x 8.5 8.10h.p. 2-seater RILEY. 4-cyl. foj. $8 \times 11011$ h.p. Chassis z-erater 4 -seater Touring..
 2,100
 Prover. 4 -cyl. 75 \% 19012 h.p. Chassis 2-seater j-seater Touririz
POVER, Liaht Mrodel. 2-cyl. \& h.p. 2-seater
 5-seater Trurirg SEABROOK. 4-ayl, 6.3 / 120 11.9. h.p. 2 -seater Appx....


Crouper.

5-seater Touring...
STAFEORI. 4 -cyl, fig $\times 12011.3$ h.p Chassis
4-seater Touring
STANDARD. 4 -cyl. $922 \times 110$ a.5h.p. Chassis 2-seater
4-semtar

2-seater
y-seater Touring
4-cyl. 20.1 h.p. Chassis _. $_{\text {j-stater Touring }}$


France Takes Gordon-Bennett Trophy<br>

In the meartime, Sadj-fectinte hand firmoted in the
 the wimer. The Amersican di-plis: wa- deplegable. Reme. hard, stat up in-ide the flueftage of his Ja:ton-Wight.




 landinge carriage diawn up inte the body when in thatit, wat











 Ane Youts.










 $\therefore$ a liminal exer

## HONIGSBERG OPENS TIRE SERVICE

## Phillip W. Giovannini of Manila Assumes Management of New Department

Shanghai has been lacking since the establishment of the motor industry in the city of a real tire servicing organization capable of giving accurate information regarding the fitting, upkeep and handling of tires, actual expert repairing under the supervision of a technically trained


Phil. Giovannini (Jo-va-ni-ni),
n"w manager and tire erpert
of H. S. Honigsberg \& Co., Inc.,
tive service department
foreigner both in the garage and elsewhere, and assisting in the actual sale of the accessories. To fill this need, H. S. Honigsberg and Co., Inc., have announced the opening of an exclusive tire department which, with the aid of their other departments, places them in a position to render complete slervice to motor car owners.

It is probable that the Honigsberg Company will place in service soon a trouble shooting car for its tire service exclusively using the methods which have become most widespead in the United states and elserhere. A motorist on the road several miles or more from the garage will be able to have first aid given to his tires on the spot by calling the tire service station instead of damaging his tube and casing by attempting to run in on a flat.

The opening of this department has been delared due to the fact that the company has been seeking to obtain the


Tire service department, H. S. Honigsberg of Co., Inc., Shanghai
services of a tire expert who would be able to maintain the reputation of this department on a lar with the other
activities of the company. Such a man has been found in Philip W. Giovainnini, of Manila, who is one of the best and most experienced tire managers in the Far East.

Mr. Giovannini has had twelve years of experience in the tire business in Manila, during all of which time he operated his owtn company and established an excellent reputation with the motorists of the Tslands. His experience there has made him a consulting tire expert and a large measure of his success has come from the fact that he has given advice to the owners of motor cars regarding the proper types and sizes of tires to use together with information as to their care. He also insisted on regular inspections at his place of business and repairs when necessary, all of which gave to the owners increased mileage.

It is Mr. Giovannini's intention to establish a similar service in Shanghai after an investigation of local conditions. He is of the opinion that he can give motor car owners of the city information that will lead to greater mileage and less trouble. Because improper care and abose seems to be current.


The, steam culcanizing plant
A staff of experienced tire men has been brought from Wanila for the installation of a complete and modern vulcanizing and tire repair plant.

Mr Gioranmini has found that the outside appearance of a tire which has gone out of service prematurely, oftentimes is deceiving. A tire which appears as though it will justify a repair often upon examination will be found to have been so badly damaged that a repair would be useless. Another tire which may appear to have given all the miles built into it may be found to justify the expense of a repair and give a lot of additional service. For this reason Mr. Giovannini inspects every tire personally in addition to personally supervising all repairs and any work done is guaranteed to give satisfaction.
(Continued on page 9i)

# $\mathbb{F} \mathbb{R} \mathbb{E} \mathbb{P} \mathbb{R} O \mathbb{O}$ YOUR GASOLINE 

 WITH A
## JOHNS-MANVILLE FIRE EXTINGUISHER

It discharges a fluid that is deadly to burning gasoline, oil and grease. It will kill incipent fires before they grow dangerous and do it more quickly and more surely because of a distinctive operating feature, which is this:

You may use the machine as a pump to discharge it, or where space will not permit of pumping, the Extinguisher may be discharged by stored air pressure.

This optional operating method is an exclusive feature of the Johns-Manville Extinguisher.
lt is also an essential part of your car's equipment.
Ask your garage man or dealer to demonstrate one.


Can be operated by anybody, in any position, anywhere.

## Johns-Manville Automotive Equipment

## THE KOSHERS COMPANE

SINGAPORE
SOERABAYA
AUCKLAND COLOMBO

San Francisco, California,
Exclusive Representatives for the Orient.
Head Office for China; 12 Nanking Road, Shanghai.
Complete Slocks Maintained in Shanghai.

NEW YORK MANILA TIENTSIN HARBIS

## AKRON HAS BIG YEAR

## T'ire Manufacturers Show Increased Production and Sales

Akron's larger tire companies are rounding out the biggest and most sticcessful year in their history despite the slump in the ture business, as indicated by sales reports of the Goodyear, (ioodrich, Firestone and Mitler companies, the "Big Four", of the tire industry, issued November 1 from the Ohio City.

Goodyear surpasses all others with sales for the fiscal year ending October 31, aggregating over $\$ 205,000,000$ as compared to $\$ 167,000,000$ last year. Firestone with sales of $\$ 75,000,000$ two years ago and $\$ 91,000,000$ last year, reports that its fiscal year just ending will show sales in excess of $\$ 105,000,000$. The Miller Tire and Rubber Co., its officers announce, has had greater sales during the first ten mionths of the current year than during the entire year of 1919. Last year's sales were $\$ 27,116,588$. Sales so far this year are $\$ 27,440,743$. The company expects its aggregate business up to January 1 to exceed $\$ 31,000,000$.

The B. F. Goodrich Co., conforming to its policy of not announcing sales by months or periods, although giving no definite figures, indicates that its business so far this year is far in excess of its 1919 record of $\$ 143,000,000$.

These announcements, tire company officials state, should tend to offset unfortunate rumors spread broadcast that retreuchment in the tire industry has caused Akron to slip and that Akron's rubber companies are on the verge of shutdown. The low ebb of the tire slump has been passed, tire experts say, and business is picking up. Outlook for the future is far more optimistic than at any time during the past two months, and all manufacturers are laying plans to resume normal production January 1.

## U. S. Looking Auto Accidents. <br> (Continued from Page 34)

of both law and morals they are under no obligation to be as careful as that. "Reasonable care" is all that can be demanded or is expected of them, and while only the same demand and expectation rest on the drivers of automobiles and other vehicles, the drivers justly are held to a greater care than pedestrians for the same good reasons that establishes the law of the sea as regards steamships and sailingvessels. The latter have the right of way always, and the faster, more manageable, and heavier craft must do the slowing down and turning as circumstances decide.

These remarks are not intended to excuse the carelessness of pedestrians or to deny that their carelessness is sometimes so great as to transfer the responsibility for their injuries from the chauffeurs to themselves. But it is a fact
that people afoot do not incur blame or deserve criticism quite as soon as do the manipulators of motor cars, and that they have rights in the streets, even though they choose to cross elsewhere than at the appointed places.

The Rochester "Democrat and Chronicle" point out that in some European cities the authorities think that pedestrians and automobiles lave equal legal rights, and make it

liound a curve, a stind and the result
a misdemeanor for pedestrians to be negligent when crossing roads. If it is proved that an accident was caused by a pedestrian's carelessuess, he is fined even if he has been injused. Most of the papers that comment on the situation propose remedies for reducing the number of automobile fatalities. An interesting one is that of an autoist who suggests that among the most effective ways to prevent automobile accidents in the city is to "forbid the use of the horn or signal in city streets." By this prohibition he would place "the burden of not hitting pedestrians entirely on the drivers, where it belongs." This man is further credited with saying ine "can drive an automobile from one end of New York City to the other without using my horn once and without jeopardizing any one." Dr. W. I. Ettinger, Superintendent of Schcols of New York City, would tackle the evil by inculcating "safety-first" ideas into the rising generation. In a statement in the New York "World" he says:,

1 am seriously considering the advisability of emphasizing during the coming term instructions in all classes in simple rules and habits intended to insure safety in the streets. There is every reason why children should be constantly cautioned with reference to the necessity of such rules 8 i the following :
(a) Stop, look, and listen before crossing the street.


From unretouched photograph of Playboy Model


JORDAN cars are built by men who love their work and express pride in its execution.

The personality of this motor car which has brought national recognition, cannot be defined in terms of mere mechanical units.

No single attribute of quality can express its dominating appeal.

Better say that it possesses a certain kind of honest goodness which enables it to serve adequately in a practical way,
those admirable people who can never be happy with commonplace things.

It is quiet-as a car of character should be-and it carries with it an atmosphere which is in perfect keeping with that good taste in every detail which the name of Jordan instantly suggests.

Color and grace give it rare distinction among the mass. Comfort in a gratifying degree makes it the chosen car of those who love comfort.

## ronm

Exclusive Distributors For The Far East
 Shanghai motors corporation 14 Canton Road 237 Lungmen Road

# FRANCE PLANS FOR 1912 <br> FiveRaces Including Grand Prix Are Being Contemplated 

Teeognsing its mistake, and lowing (o) the wishem of the industry, the sporting ('ommis- sion of the Antombbite Club of France has decided to abolish the emoine te: in connection with mext year's (inand l'rix rowd bate, and to hold this event for cats of there litres piston disj latement and a minimun weight of soo kilos cmpity.

The first names have already gone on the entry list: they are four Ballot cars, built by the Ballot Company, of l'aris. These will be the same, (ir similar, cars to those which ran at Indianapolis this year, and which have, as is well known, eight eylinders in line. It is not known who the drivere will be, for at the present time the only prmanent member of the Ballot team is Jean Chassagne.

The only ather charge of importance in the (irand Prix conditions is the reduction of the entry fees, which now stand at $15,000,26,000,35,000,43,000$, and 48,500 francs for respectively one, two, three, four, and five cars of amy one make. French firms seem to consider these high, but the fact has to be faced that organising expenses are also very much higher than before the war.

At least four districts are candidates for the race, with the neighborhood of Strasbourg as favorite. It is more than likely that the race will be held on a short course, the suggested distance round varying from ten to twenty miles.
in the $r$ ast the fear of accident has been so great that a long course has always been solected, the result being that the race was costly to organise, there was very little overtaking, and considerably diminished interest for the spectators. It has now been proved that a short course can be made perfectly safe, and all the prominent Continental drivers would be quite satisfied to run on a circuit as short as eight or nine miles round. It has been suggested that with a short course the whole of the roads might be shut off to the public, except on payment of a moderate fee, thas secunng for the organising club a very important revenue which might be utilised either as additional prize money or as a refund to the competitors.

It is not known whether the clutb will take up this suggestion, but it is almost certain that one of the most prominent provincial clubs will get permission to transform a set of roads into practically a permanent race track, with payment to all parts. This, of course, will not interfere with the normal use of the roads at ordinary times, but it will give the club a track with permanent grand stands, permanent bridges, barriers, etc., and whilst reducing the cost of organisation will considerably angment the receipts.

The French Grand Prix next year will not be the only three litre race. Indianapolis, of course, will hold its sweepstake as usual on May 30th. Usually the French riace is held in July, and it is hoped and expected that such

## U. S. LOSES IN PRICE CUT

## Government Will Be Deprived of Millions in Tax Revenue

Fiffect on the finances of the United States, in the mattor of tix teturns on automolsiles, as a result of the price conts ammomed recently, will be considerable and it is (Mimmat that the decrease in taxes in Detroit alone will am:mit to mamy million dollars a year.

The Ford cut alone will reduce revenue receicts approximatel! \$5:H,000 a month. The tax on automobiles is $\$ 5$ for \$10.0. The avelage paice reduction on Ford cars was \$1.al. (hi a bas is of Fend production of 3,500 cars a day, approximately 87,500 a month, this would indicate a revenue (an of momal \$6.50,000 a month. Ford production since Soptimber 1 hase been about 4,000 a day which would make the revenne loss approximately between $\$ 7,000,000$ and \$0,000,0,010 a yeai on that car alone.

This is but one item. The price reductions necessarily will cut the profits of the concerns making them with the result that the effect will be felt in the income and excess profit callections from these campaniess. It is the contention of many persons, and this applies particularly to manufacturers who resent the action of Ford, that he was taking into consideration this saving in income and excess profit tax then he made the reduction and they contend the decroase in the government charges he will have to pay will in a great measure offset the loss occasioned by the reduction.

With the normal production of Maxwell-Chalmers, Hudson-Essex, Paige and the Detroit Studebaker factory, averaging around $\$ 2,000,000$ a year, on a basis of an average cut of $\$ 150$ a car, the decrease in war tax alone would be $\$ 1,500,000$. On some of thase cars, however, prices were decreased as much as $\$ 2200$.

At all events Uncle Sam is going to find his pocketbook greatly depleted as a result of the price reductions in the Detroit automobile factories. This, of course, does not take into consideration the many industries allied with the atitomolile which are expected to announce price reductions from time to time.

For the fiscal rear ending June 30 the automobile tax collected in the first district of Michigan, which includes Detroit, amounted to approximately $\$ 45,250,000$. During July and Argust the tax paid was more than $\$ 10,000,000$.
arrangements will be made that American cars cam compete in France, and French drivers who have gone to America can get back for their great event.

The Belgian Automolile Club will hold a big road race for three litre cars during summer; there unduobtedly will be a similar race in the autumn at Le Mans, and the proposed Brooklands 500 mile race can be expected to be held late in the summer.

This gives five big three litre races for 1921.


# OUTPUTS SLUIMP IN DETROIT 

## October Production Shows a Decided Decrease

Siste from Ford, Dodge and Buick, production duming Oetober wats only 10, 43:2 pasenget (ats in the betroit territory inchuding all Xichigan and Overland and Willys. Kinight plant in Ohio. 'This conplate with $27,2,51$ buitt during September exclusive of these three factories. The total cars produced during Octoher was 124,439 compared With 139,290 in september.

The Ford factory reforted a record month in October with 99,967 (als and troks and a daily record was ostablished October $2 f$ with the production of 4,6 sis. I ondge started a scale of e:25 daty the first of October and maintained the schedule throughout the montl. Buick built 12,690 during October but amounced that the schedule would be cut from 530 daily to 350 from Nov. 1. Hupp which has been rumning to capacity depite the slump cut [roduction from aromd 2,500 a month to ten daily Oct. I and the factory is now operating on that sehedule. Cadillace maintaind capacity 1 roduction and put ont 2.000 cars charing October despite a 25 percent reduction in the employee force two months ago. Increased labor efficiency permitted the maintemance of capacity schedule according to G. H. Laying, vice-president.

The majority of the plants are taking advantage of the slump for inventory taking and are making no attemet at productian. Oakland has been closed the greater part of October but will resume Nov. 15, according to President Warner. Chevrolet built an average of 85 daily from Oct.

15 and will try to maintain that schedule indefinitely Oldsmobile is taking "inventory and will bo closed indefinitely. Packard is working hard on the new single :ix but is building only closed models of twin six. Producticn during October was cut about 50 percent, from momal which is: around 750. Packard is buildug practically no truck ${ }^{\text {s }}$ 'aige is about 25 percent under Septembor output of passenger cars and output of trucks is practically nothing. Paige officials, however, see slight umprovement for November due to export busimess.

Studebaker is rmming on full schedule at South Bend but is way off on production at the Detroit rlant where the October output of 2,600 was about 35 'percent off, The Detroit plant is working four days a week. Saxon and Scrip! have heen down a great part of October and production is 60 percent off; Hudson-Essex is practically closed but may open some departments this week. Lilyerty and Columbia are aprroximately 70 percent off production and Fing luilt only ahout 35 cars in October before the receivership.

111 exechtives report slightly upward trend apparent and with election over and confidence returning, ther look for a noticeable improvement by the end of the year with the outlook for a return to normal in the early spring. The Gemmer Manufacturing Co., making steering gears for sixty companies, has been down for two months but will re-open probably Dec. 1 ; according to Vice-rresident G. E. Wilder.

## VAUXHALL LOWERS PRICE

## Increased Production Makes Possible Reduction for Markets

A reduction in the prices of their cars is anmounced by the Vauxlall Motors Limited, to take effect as from October 1st. The reduced prices for 1921 models are :2.5 h.p. Taushall chassis $£ 10.50$, 关 h.p. Tamxhall Kingston
 Vauxhall Velox car £167oั.

I greatly increased rate of output hes ben amieved in the Vauxhall works during the last few months.
 much lower than had boen estimated on the lat occasion of fixing prices, the Company finds itself able to lower its prices by a considerable amount.

The revied prices are calcolated to biedd a proit ef approximately 10 percent on turnover, in accordance with the Company's policy.

The prices of closed bodies supplied by Vauxhall Notors Limited, but not of their own manufacture are not reduced.

HOW ABOUT THIS FOR A SQUEEZER?


The urorld's largest press that is big cuongh to accommodate a five-ton truck between its mammoth jaws. It is designed to press the heary side, chumel frame members used on motor trucks


THOSE who have wanted a small light car combining the utmost in fine motor car construction with the obvious advantages of small size, will find this in the Templar. Ease of handling and marvelous economy of up-keep and maintenance are inherent in the Templar.

Quality
Economy

Tereaplazo
Too Valve Motor

> Stability and

Refinement - are all embodied in the Templar to a superlative degree.

## Two-Passenger Roadsters and FivePassenger Touring Cars in Stock <br> THE CENTRAL GARAGE Co.

## Exclusive Agents for Central China

2a Jinkee Road. SHANGHAI.

"Boost for Good Roads in China"

# GERMAN MADE AIRCRAFT IN U. S.? 

## Investigations Being Made to Determine Attempt to Evade Treaty

American rercmatic interests are seeking diligently to detemme whetlice or net there is a lomatation of forl freck of at cable dispatch from Pathe atereting that the fa,mon Zepredin Werks would be thanefoned to the United states becatue of the restictions phaced by the 1 ace Treat! up on the manniscture of aircraft within (ierm.ms

There is frank skeficicism over the probability I :my such mowe in the near tutue at least. It is lachel to be merely another step in the plan for "German penetration" of the United States in aeronautics. It follows the visit to America in June and July of the managing directors of the Zeppelin Co, and their futile efforts at that time to interest American manufacturers in the project of establioning a fectory here for the construction of dirigibles to be used in trams-Atlantic Hights.

The Germans visited the plants at Akron of the B. F (iootrich ('o. and the (icodyear Tire and Rubber Co. and then called on Hemy Ford at detroit. It is understood that neither Gecdrich nor Gcodyear are interested at this time in the further development of aleronatics. They are having plenty of trouble in the tire field. Neither has it developed that Ford has entered into an agreement with the Germans.

Fhece have been later reports that the HamlurgAmerican Steamship Co. wculd back the Zeppelins in the establishment of an airship service between Berlin and San: Francisco. 'This report had it that American money would provide landing fields near Jew York and on the Pacific Coast. The inference was that if any American inierests were connected with the enterprise they were those in the American Ship and Commerce Corp. which has entered into a trade alliznce with the Hamburg-American line.

Little has been told in the States of the more or less mreterious visit of the Zeppelin representatives. There were three of them and they came in June. The member ${ }_{s}$ of the party were: Alfred Colsman, president of the Zeppelin Airship Construction Co., Ltd., of Friedrichshaven ; W. E. Doerr, vice-president, and Herr Milatz, another vicepresident. There have been intimations that their entry moto the Linted States was facilitated by efficers wnected with the ariation service of he Xiars.

The Germans were introduced to certain American aircraft manufacturers by Tieut. Raafe Emerson of the Lighter-then-air मivisien of the Naval lir Selvice. It is knewn that the Germans attempted to sell the United States Navy on latloens While there the \%eppelin representatives had frequent confcocnces with efficers of the Nary who seanned with deep interest theieir detailed plans for construction of luge aischips. But nothing ever has been disclosed concerning these deliberations and the facts regarding them are locked up in the archives of the Navy.

The point about which American manufacturers are in

HERE'S YOUR GROCERY ON A TRUCK


Kight at your front door-a novel inlea now used in Los Angeles. A description was published in THE ORIENTAL MOTOR for November
dinnt is whether Herr Colsman and his a asociates actually sloceede? in oltaining American backing for their enterprise. About the time that they were there Ford sent to Europe his chief aeronautic adviser to study aviation abroad, but there has been no ropolt on the results of his investigation. The anxiety of the Z̈eppelins to transfer their operations to the U.S is easily explained. The Allies have taken a firm stand for the rigid enforcement of the military provisions of the Peace Treaty and thereby have put a crimp in the development of aeronautics in that country.

The armistice provided that the Germans could not resume the construction of aircraft until six months after the signing of the treaty and then only after the delivery to the Allies of vast quantities of war supplies. These supplies had not lieen delivered late in June althongh the six months expircd on July 10 and the Allies gave notice that no new construction would be permitted until the treaty terms had been executed to the last detail.

The Zeppelins are not confining thoir activity to the United States, however, for it is known that they are selling dirigibles to Japan and that negotiations are under way for the establishment of factories in that country.

Even more interesting from a practical viewpoint has lecmi tice effort of llie Junker interests to convince the states that all-metal plance are the last werd and the crowning point of aviatioll. A Junker appeared at the aviation fields on Lung Island in June and was hailed as a senlsation but crached on its first or second flight. This machine was in charge of Emil Mons, a German army pilct.

Thien along came "ohn Larsen, with the J L 6, which is in reality a Junker plane, although a skilful attempt was made to give the impression that it was a triumph of American genius. The planes of this type were brought in by Larsen, who pait duty on them at rates ranging from $\$ 2,000$
(Continued on Page 64)


## FRENCH MAKERS ASK PROTECTION

Prohibition of all Finished Cars is Wish of Syndicate


 for the !erote tion of the industry. This, sele i= laken l.e(anse of the extremely bad gemeral con litions and the fear of tereign comptitiond. 'The ple: of the manafictumers

 derelopment of alcohol ats al sul):titut: frel. The (iovernment is also asked to use every effort to diftion more favorable freight rates for foregn shipments and to relace the fresent price of coal as well ass to fut and ond to the sale of arms motor vehieles.

The (iosemment hiss not ret replied to the petition lint is giving it serions consideration. The movement is directed chiefly against the Linited States. Ithough antomobile impoits into France have derased $3: 3$ percent as compared with last year, French manufacturers fear that ther are on the eve of a great Amencan antomotive invasion. The recent amnouncement of price reductions by American manufacturers and the big drop in price announced by the Ford company of France have given rise to grave apprehension on the part of manufacturess in the country

Conditions in France undoubtedly are bad. All manufacturers who are in production have hat to reduce their output, and those not yet in production have modified their plans. In their appeal to the Government, the manafacturers complain bitterly hecause France has had to absorb almost all the automobiles discarded by the Allied armies.

## German Made Aircraft ln U. S.?

## (Continueel from Page 6:\%)

to $\$ 4,000$. This value must have been arrived at on the hasis of the exchange value of the German mark in American doliars, for the planes were sold over the counter by Jaren for \$30, (0, 0 each. Three of the J I, 6 machines were bought by the Navy for $\$ 30,000$ each, three by the Amy and eight by the Dost Oftice Deparment.

These planes were taken over by the governmental departments without any of the rigid tests which are required of American mariufacturers before aircraft are accepted. They were put into service at once by the Post Office Department and a few days later came the tragedy which cost Pilot Ma. Mitler and his mechanician then lives. Soon afterwards two other mail pilots were killed.

The disastrous attempts of the Post Office Department to use these machines resulted in a storn of protest all over the country and did more than anything which has happened thus far to give a black ere to the ammal service.

A report made by the Post Office Department of its investigation of these alcidents cays that they were due principally to a defective gasoline feed system and adds:

- There is no truth in the statement attributed to Larsen


## VOISIN WINS FUEL TEST

## French Event Won by 30 h.p. Car Weighing 5.321 lbs .

French fuel consumption tests which brcuglit 80 comUtitns: twether at Lee Mins: were won by a $30 \mathrm{~h} . \mathrm{p}$. ToisinKnight sedan, weighing $5,321 \mathrm{lb}$. It covered 136 miles with 1.n Amedicall gal. of patsoline. The competition was run on (.). linal! y ouds. Each mathine was given a stated amount if giowline accoding to engine size ant weight, the wonner being the cne which covered the greatest distance.

The eecend paize went to a Chenard-Wialcker pneumatic tired tractor trailer weighing $19,550 \mathrm{lb}$. which averaged 7.7 miles a gal. A four-pessenger Citroćn weighing $2,568 \mathrm{lb}$. averaged 00 os miles to a gal. The recerds of other com1.etit 1 . folls.W

Fcur-cylinder 2-seated Peugeot,-76.1 miles per gal.; Fond weighing 2, 555 1ts., 26 miles per gal with a Clandel carburetor ; open Cadillac weighing $4,894 \mathrm{lb}$., 13.6 miles per gatlon.
l'he competition, which constituted part of the fetes in ecnnection with the erection of a monument to Iseon Bollere, moved great interest in view of the high cost of gasolme in France.
that the accidents to these machines were due to lack of ordinary care on the part of the Past Office Department employtes. The accidents were, on the contrary, directly attributable to the defects pointed out."

Development of all mental planes has progressed further in Germany than in any other country. This is due to the fact that the Germans were farced to use metal in the closing months of the war because they had no other materials. Persistent attempts to develop metal machines have been made in England, France and Italy, but they have not passed the experimental stage. Similar experiments are under way in the United States, especially under the direction of the Army Air Service, but there is a wide and honest difference of opinion among American manufacturers and among European for that matter as to whether the ideal aircraft of the fature will be an all-metal machine. machine.

For this reason Ametican aircraft interests view with regret the apparent acceptance by the Army and Navy and Post Office Department, without what they consider adequate tects, of the (ienman assestion that the J L 6, a Junker plane, sold by Larsen, was the crowning achievement of aviation. Larsen has returied to Europe anid for that reason it has not been possible to obtain from him a statement on the assertion freely made, that he is an agent of the Junker company and was not handling the machines he sold on his own responsibility.

While the Zeppelin activities were under way and the Junker propaganda in full swing, Dr. Schutte, president of the Schutte-Ianz Co., the only other rigid aircraft constructors in Germany, also was busy in the United States.

## The 1920-21 Models <br> 

The Best Known Car on the World's Market Today 8 CYLINDERS- 18 H.P. 8 CYLINBERS-12 H.P. 4 CYLINDERS-10 H.P.


THE 8-CYLINDER is the highest lype of chassis made and is particularly adapted to the construction of Juxurious bodies to meet the requirements of those who demand the best. The motor is high powered, absolutely silent and vibrationless. THE 10 H.P. machine is called the industrial car as it is most suitable for Merchants and Doctors-economical to operate, light on tires and simple to handle.

## INSTOCK

$$
\left\{\begin{array}{l}
\text { New Mathis } \mathbf{8 / 1 0} \text { h.p. Chassis } \\
\text { Talbot-Darraç } 14 \text { h.p. Chassis } \\
\text { Citroén Coupe } \\
\text { Velie G-cyl. Tonring } \\
\text { Mppersou "Cight" Toning } \\
\text { Michelin Tires, Cords and Fatbrices }
\end{array}\right.
$$

Also full line Kissel Cars, 7 -Pass. Touring, 4-Pass. Sport and IRoadsters.
For full particulars apply to Mr. Philippe Osterberger

## GRAND GARAGE FRANCAIS

## Exclusive Agents for China

## HAND SIGNALS TO BE COMPULSORY

## British Ministry of Transport Practically Reaches Decision for Enfurcement



That hand signals are to be compulsory in their cmployment by drivers of all motor vehicles is the decision Whict: has pracite lis been made by the bition dimisth; of Tramsport, according to recent information in the Far Fast. The signals will be standardized to indicate changes of peed and direction.

The two signals which it is almost certain will be rendered compulsory are shown in sketches Nos. 1 and 2 produced above.

They represent the movements of the right arm for, "I am about to stop," and, "I am going to turn to the right."

Failure to emplor them will be punishable as an offence, and all vehicle drivers will have to use them-and use them correctly.

The motorist's arm signal code has grown up from over twenty years' experience, and it seems a pity that the Committee which has been sitting to advise Sir Eric Geddes does not recommend the legal adoption of all four accepted signals. The two which, apparently, are regarded as of secondary importance are illustrated in sketches 3 and 4. No. 3 is particularly useful as a warning to overtaking drivers, but is seldom practised.

## FRANCE TAXING MOTORS TO DEATH

## Government is Killing Trade by Heavy and Varied Tariffs

0NE of the causes to which the recent stagnation in the French antomobile trade is attributed is the heavy taxation to which owners are subject. American motorists in the past have repentedly protested against what they termed "double". taxation, but the term "double" falls far short of adequately describing the manner in which the tax screws are being applied to automobile ownere in France. American manufacturers are more or less interested in this matter, for if the automobile trade in France is killed by taxation it closes one otherwise promising export fields, says "Automative Industries."

The French Government still regards private passenger vehicles as articles of luxury and applies to them the luxury sales tax of 10 percent. This tax, moreover, is payable not only when a car is first sold, but every time it is resold, and this is bound to put a considerable crimp into the custom of cortain classies of buying a new car every year or two and getting rid of the old one either by direct resale or by trading it in.

Next come the annual taxes. These are graded according to three factors, namely, the population of the city or town in which the owner lives, the seating capacity of the car and its horsepower. There are three separate schedules and the taxes according to the different schedules add together. According to what we may call Schedule A, two-passenger cars fay 100 francs per year in Paris and 80 francs elsewhere, unless they happen to be of less than $12 \mathrm{~h} . \mathrm{p}$. , in which case they, pay still less in places of less
than 40,000 inhabitants. Four-passenger cars pay 180 francs in Paris and 150 francs elsewhere.

Schedule B hits the pcwerful cars. According to it there must be paid an annual tax of 15 francs per horsepower for each of the first twelve; 21 francs for each horsepower from the thirteenth to the twenty-fourth; 27 francs for each horsepower from the twenty-fifth to the thirty-sixth; 3E francs for each horsepower from the thirtyserenth to the sixtieth, and 45 francs for each horsepower over this.

After an automobile owner has paid the above three taxes (purchase tax, seating capacity tax and horserower tax) he still has no right to take his car out on the public roads. For that he needs a "permis de circulation," which may be translated as a road permit-one for each vehicle owned. Roads cause heavy upkeep expense, and so the rad permit conld not be expected for a merely nominal fee. Here is what the French owners of cars of different powers are compelled to pay once a year: Up to $12 \mathrm{~h} . \mathrm{p}$., 100 france ; 13-24 h.p., 200 francs ; $25-36 \mathrm{~h} . \mathrm{p} ., 300$ francs; $37-60 \mathrm{~h} . \mathrm{p} ., 400$ francs ; $61 \mathrm{h.p}$. , and over, 500 francs.

All the above taxes go into the national treasury. But the departmental and communal governmevts cannot be rum without adequate income, and practically their only source of income is taxation. The French Farliament has nicely taken care of the departmental needs by simply roting a "majoration" of 25 percent on Schedules A alnd

[^51]
## MICHELIN TYRES



USE MICHELINS, OLD MAN, AND CUT OUT ALL TYRE TROUBLE

The new 10 H.P., 12 H.P, and 18 H.P. Renaults have arrived. Let us give you a demonstration run.

## The Auto Palace Co.

 362 AVENUE JOFFRE, SHANGHAI PRACIICAL MOTOR ENGINEERS TELEPHONE W. 465
## THE FIAT SOVIET COUNCIL



This attempt to injeat inluatrinl commmuixm inte motor mating proved unsuccessful

## Forecasting the Olympia Show

( C'ontinuel from page 1t)
nickel fittings and an aluminium instrument board. They are also showing a Ťauxhell-Telox 4 seater $30 / 98 \mathrm{~h} . \mathrm{p}$. chassis with body and wings of polished aluminium. This is the car the makers claim, with justice, can-on the day of delivery--do something between 90 and $100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. round and round Brooklands. The number of "pots" won by the $30 / 98$ h.p. Vauxball are too numerous to be counted, and for anyone wishing to shine in competition work, no better car can be recommended. The firm also show a VauxhallVelox limousine on this chassis, and this is the first time such a hody has been built by the Company. For such a high h.p. the car is very small, being built for speed and sporting use. It is not, therefore, possible to fit the limousine with large seating accomodation, the back seat accommodating not more than two at a pinch. It is probable that this will be the fastest limousine on the roads.

Unic Motors, Ltd., who are sole concessionaires for Great Britain and the Colonies for Unic cars, are showing their $13 / 24$ h.p. colonial chassis, type M2E. Without tires


A new type of 5-passenger body on the Guy 20 k.p. S-cyl. chassis
this sells at £950. 'The treasury rating is 15.9 , bore and stroke 80 by 130 , whilst the car is fitted with aynamo lighting and self starter. In addition to the chassis an open touring body landaulette and a coupé body will be shown.

One of the fastest little cars to be seen at Brooklands lately is the (i.N. The engine, 84 bore x 98 stroke, is air cooled. Three speeds forward are provided, with dry plate - Hatch and final chain drive. The car is a mall one, \&ft. 6 ins. wheel base, 3ft. 6 ins. track, whilst either Smith or Ratax lighting sets are provided. Frices range from $£ 276$ tu E:31.; for their model "Tites se." The Singer has a whel bue 万 ft. 6 ins. They nake several types of body, phatcon, a anorting tyre, and a colls, the latter leing particulaly usful for a doctor"s tun-about. It the prices now mbing the two fomer models can la pucherod for $£ 500$, whilst the latter costs flll: more Tho engine is far rtinders cats in pairs, $63 \times 180$ of 1096 ace. A high tension magneto is fixed; the carluetoi is ? Claudel Hobson. A gravity fed petrol tank in the scuttlo dash eliminates a great deal of trouble. The ignition is fised with both hand and foot throttle control. Shock absorbers are fitted which do away with some of the discomfort of short wheel base, whilst the tires are $700 \times 80$ with detachable steel whesls.

The Star Engineering Company have apparently made little alterations to their old models. They will be exhibiting a 15.9 and a 21.1 chassis with touring bedy on the former and on all-weather salcon on the latter.

A car of which we ought to have heard more but have not, is the 11.9 Riiey, with a coupe body at $£ 700$. The firm


The new 16-20 h.p. Ruston-Hornsby
also have a very fine idea of what is termed a family body with tip up seats at the back, a great improvement on the old dicky.

Amongst the pioneers of light car work are Lagonda, Litd., whose works are at the pleasant little riverside town of Staines. The nominal rating of their car is $11 \mathrm{~h} . \mathrm{p}$. with bore and stroke 69 - by 95 , The engine has four cylinders cast monoblec. Thermo Syphon cooling system is used with a lighting and starting set by Messrs. Vandervell: The fuel is gravity fed, whilst three forward speeds are given. The car sells at $£ 495$ with a four-seater open or a two-seater coupé body. It has a 9 ft . wheelbase and 3 ft .10 ins . track, and the standard weight is 13 cwt. Many of these excellent litttle cars are to be seen on the road, and it is one that can be confidently reocmmended. Last year no exhibit caused more attention then Messrs. Napier's stand. They are showing at Olympia this year on stand No. 89 with one model $40 / 50$ six cylinder Napier. A chassis and a saloon landaulette body will be exhibited.

October, 14, 1920.


## Stewart reputation is now world-wide

Eight years of satisfactory service prove the Stewart Truck is right in design, construction and price. For Stewart Trucks built eight years ago are still working and earning ; making money for their owners; building up a reputation now world-wide. The growth of this business has been rapid. Starting with sales of G. $\$ 58,000$ in 1912, to-day business men are investing over a million dollars monthly in Stewarts. And Stewarts quickly prove their quality by work performed and profits earned for owners.

For Stewart Trucks are designed by experienced truck engineers, without a useless part, without a made-over passenser car part in them, without a needless pound of weight. One used on trial soon proves its worth, and around it the fleet of Stewarts is built up. Stervarts are at work to-day in 800 American cities, on thousands of farms, in 39 foreign countries. Factory capacity has beon doubled this year and deliveries aro being made promptly from stocks carriel in Shanghai

## H. S. HONIGSBERG \& COMPANY, Inc. 40 BUBDLHNG WEML ROAD, SHANGHAI

## The Largest Distributors of Motor Cars in China

## Stewart trucks have won - By costing less to pun

# "YELLOW AND BLACK" TAXI SERVICE BEGINS 

Shanghai Taxi Cemfany Will Give City Modern Mitor Transcortation


A perert of the first fleet of the Shangluai Turi Compuny


Close up of the new tarimeter. Indicators show fare, vacant or engaged and eatras-only in this case no extras will be churged
'Call a Yellow Cat ," is a familiar slogin in the United States in almost every city of importance and now the suggestion, "call a Yellow and Black Taxi" is going to become a byword in Shanghai with the advent of the new Shanghai Taxi Company. The city has had its hire services but this will be the first actual taxicab venture giving that motor transportation with which most Westerneis are so familiar

The most modern methods have been announced by the new comprany, including stands on the varicus dewnte wn streets of the city, taximeters enabling the user to pay only for the actual mileage and indicating whether the car is engaged or for hire and brass keys for charge accounts.

The hhanhai Taxi Cimpany is an American enterprise organized to give modern motor service to the city by a number of its reridents. It has been invorporated in the United State. Court for China and its directors are: James S. Dolan, H. V. Bemard, D. Haimovitch, E. C. Stocker and R. D'Auxion de Ruffe. The capitalization is Tls. 50,000 . The motor service will be inaugurated during Christmas week.

Fifteen motor cars equipped with landaulet bodies constitute the first fleet placed in service. This number will be increased shortly. The bodies have all been designed to meet the needs of the local service. 'They are equipped with a modern heating system, dome lights, and will be cleaned deily by the vacuum method. The body finish is sellow with black fendew, ruming boards and landalet l:ods, yiving the cans a striking appearance that will do much to increase their popularity by means of publicity. A novel feature is the stamping on the sides and back a picture of a telephone with the company's number in silver. The moncom of the company is on the doors of the cars, and a uniform of blue with the company's monogram in gold on the cap has been adopted as a livery for the chauffeurs.

The comprany will operate two or three central stations located in various parts of the city for the convenience of their patrons. A new garage has been erected on Rue Lafaryette, in the French concession. The head office and service station will be in the International Settlement at 2 Woosung Road. In addition to these stations, cars will be available from definite stands on the various downtown streets and may be hailed at any point when the "For Hire" sign is up on the taximeter

The use of the taximeter is enticely new to the city of Shanghai, hire cars in the past having been operated on the basis of an hourly charge or the fraction thereof. The company has installed the latest type of taximeter now being emrloyed in the United States and a fixed schedule of prices has been determined. A charge of ten cents for each four minutes of waiting and a like charge for each one-fourth mile covered has been made the basis of the schedule. A minimum of eighty cents has been establish-


A side tiew of the new "Yollow ant Black C'rbs" showing "For Hire" and
"Engaged" arm on taximeter
ed. Under the schedule the following rates may be taken as typical: from the Bund to the Race Comse 80, conts; from the Ihund to St. George's Farm, \$1.30; from the Bund to the end of Avenue Joffre, $\$ 2.10$; from the Bund to Carter Road, $\$ 1.00$. No extra charges will be made.

An additional feature which is also new to the city of Shanghai that has been in use successfully in the United States and elsewhere is the charge system. All percons who wish to have accomnts with the company will make application on a printed form. This form being accepted the aplicant is issned a key with the wame of the compeny and the number of the individual's permit on the key. Only those persons possessing such a key will be able to obtain credit from the company and the casual users will pay

 a colpucily af four persoms insille:

Eash to thes drivers. It is estinated that mader the whed

 tho now method of the Shanghas 'laxi ('ompany wilh place
their service or: a practical business basis, as well as giving adequate facilities and protection to their patrons. The rates on this account will be lower because of the reduced loss.

The new taxi service is designed for the use of the business man, who wants to obtain a car without waiting fiilten or twenty minutes after calling it tor its arrival; for the tourist stopping at the hotels who is not familar with the city and its motor car agencies; and for those percons who would rather obtain a car from the stands for short trips than call one. The idea underlying the establishment of the company is an excellent one and shoul: meet with an unqualified succose.

Along with its other modern steps, Shanghai hes beom in need of such moter car transportation, which will ment incoming steamers and trains, will have down-town stands at convemiont places, and will climinate the wating elem.nt . The most familar sights on the streets of the eities of the Gnited states are the cars of the varions taxiewh cempanios and this will be the soon of shanghat.

## GARGOYLE WINS NEW LAURELS

Two Brilliant Air Records Made with the Aid of the Lubricant







 mes.





## BRITISH MOTOR FUEL PRICES

## America Furnishes Sixty Percent of Present Supplies

Britain's gasoline supplies come principally from to the needs of the motorist in the United Kingdom, indeed Imerica, l,ut abo form the loar Elat, an! gri.r ta, The Wat from Rommanial and te alew.r extent loxn lib-a.t. It the
 and the cost of moter foel in the l'mited kimek han is there-
 roling at the seaboud relmerios in lmenta.


The gas filling station on the strect hase becomer pepuluer in E:mgland now after its complete encomperssing of the mentor inclustry in the Cnited Stutes

The New Fork price is umally taken at the bave $\pi$ hich regulates nct only Amenican fuel, hut supplice from Mexin, the Far East and Russia as well. Hore at once the effect of the low sterling exchange becomes evident. This item alone is costing the British importing companies roughly 2.5 percent more at the present time than under nomal conditions.

Another considerable itcm in making up the ewot of motor frel in the Fingtom is that of ocean tank steamer freights, which must be addel to the f.o.b. price. The high rate of freight charged for tank steamers, together with certain marine charges-uch as loss by leakage, insurance, etc.-must all be taken into account in arriving at the selling price.

Futher, the sale of gasoline in the Cnited Kingdom is conducted on different and somewhat more expensive lines than the sale of gasoline to motorists in America. In the United Kingdom motor spirit is delivered almost entirely in the iwo gallon sealed tin, and it shatd be remembered right hore, in making comparisons of prices in the two countries that the imperial gallon, by which measure gasoline is sold in the United Kingdom, is approximately 17 percent larger than the standard gallon in the United States.

This method of putting up the spirit in the two gallun tins adds somewhat to the cost as against distribution in bulk by street tank wagon, but owing to the large consumption through the medium of country houses, isolated hotels and garages, the two gallon tin lends itself especially


The lowicall elf-mcowning frump system is being inn lun d in the l'nited Kinglom, in lecalities where the
 a acatlale pump and rubleniwh his supplies without the inteivantio of the imuliar green can

The mere tur gates eif fuel commenly solit through lac.liges. No. 1 grade is a light gravity spirit suitable for the fan: bming engines of pivate motor care; the No. 2 grade is of heavier gravity, and used largely for motor thek tranelot, taxi-calus, huses end smimir heavy vehicles.

It has often been matter of comment by visiting Amerian motrajsts that the galages in the Uniter Kingdom sell two and simetimes, three grades of fuel, as often "aviation spirit" is sold for motor car use, whereas in America, only one grade is sold. This arises largely from the types of motor engines used in the United Kingdom and also the climatic conditions.

Fuel :us sold to motoriste in America is hardly equal to the No, 2 grade as sold in the United Kingdom, and is certamly rety much less desiral.le than the No. 1 grade

The retail price to-day for motor fuel of the No. 2 grade is 4 s. $2 \frac{1}{2} d$. per gallon, but as stated above such price is always likely to be affected by variations, either up or down, in the seaboard prices of the exporting country.

Prices are uniform in all cities, towns and villages throrghout England and Wales, with a slight advance for Scotlend and Ireland. This uniform price is of considerable convenience to the motorist, as he can pick up his requirements at any point on the road, or, if he lives in the country, he has the satisfaction of being able to obtain bis supplies at the same price as if he were located in some large center.

Owing to the very effective means of distribution in the United Kingdom the motorist has never suffered from shortage of supplies and cani confidently undertake a tour at any time of the year with cnly so much spirit as he can carry in his tank, feeling sure that he can always replenish his supply wherecver he may be, a happy condition which cannot be said to obtain in all European countries, nor even in all pante of Amenica, Where, for instance, in California motorists सere strictly rationed recently in the matter of supplies.

Editor 's Note:- Since the above article Was written the price of gasoline in the United Kingdom has suddenly heen reduced ly 3. a gallon. This decision has been reached by all the petroleum companies operating in the United Fingdom, the reeson, as given by the companies, being the increased outrut in the United States; where the economy now being effected in the use of gasoline by American motorists is a factor.


## A REASON FOR ARROL-JOHNSTON POPULARITY IN THE 1920 SEASON



Lady Clennam in her 15.9 h.p. Arrol-Johnston, a type that has met with extreme favor during this year. The 1921 model embodies many new
features

## Why are a Duck's Feathers

(Continued from Page 16)
At once he recognized the fact that there was great merit to the "Why" of the duck's feathers and that nature knew what she was doing when she provided this: anatine bird with them so abundantly.

But how to solve the froblem mas a different and far more difficult matter.

Groping for some clue which might lead to a satisfactory solution of the engima, Dr. Coffin feverishly pursued his experiments. He tested a small stream line shaped model in the wind tunnel and noted its air resistance. Then he sanded the model's entire surface and tested it in the wind tunnel. It met less resistance than the model with the smooth surface. Going a step further he tested the same model with the nose perfectly smooth and only the rear part of the hull roughened. This model met with less resistance than either of the other two.

Hitherto it had been the accepted belief that air currents deflected by the blunt nose of the dirigible hull, locped away from the hull, causing a partial vacuum or suction along fart of the ship's body, and then returned and struck the tail of the hull with glancing blows so as to again be deflected to the rear.

From his experiments on both the duck and the various dirigible models, Dr. Coffin evolved the theory that the deflected air currents instead of returning and striking the tail of the duck or airship hull with glancing force, returned in peculiar looping and forward twisting currents which caught under the edges of the duck's feathers and gave it an added push, and which also met sufficient resistance on the sanded tail of the airship model, to likewise give it a forward push. Such impetus from the air, he argued, by increasing the object's propelling power, decreased its resistance in the air. This indicated to him that the assumed forward twisting air currents met insufficient frictional resistance to furnish any propelling power

As result of Dr. Caffin's theoretical discovery the Goodyear Compant at once had :pecial tests conducted uin its
dirigible models at the Curtiss plant, and it is announced as Ircssible that the company may try similar experiments upon its big dirigibles, ky arranging for series of air pockets on the tails so as to gain the advantage of the forward push given the acsumed forward twisting movement of the air currents as they loop back and strike the rear of the hull: after being deflected by the nose.

If further tests on Goodyear dirigible models bear out Dr. Coffin's discovery and substantiate his theory, dirigible builders state that there is no reason why such air pockets should not help to decrease materially the ship's resistance by permitting the air itself to supply added propelling power.

The plan of air pockets suggested by Ralph Upson, Gondyear aercnatical expert and famous dirigible pilot, and which in all mrobability will be tried out on some of the large Goodyear dirigibles, will be to encircle the rear of the hull with a number of inch wide strips of rubberized fabric. Each strip will be cemented securely to the hull on its forward edge, with the loose edge tacked at intervals, thus providing loose flaps or pockets in which the looping air currents can catch as the ship glides through the etherear regions on trans-continental and possibly trans-ocenic voyages, and help speed it cin its way.

Thus the lowly duck becomes a logical candidate for a conspicious pedestal in a mythical hall of fame at Washington, fcr the important part it is about to play in dirigible building and for the service it seems about to render to the aeronautical world-a service of inestimable value which will tend to intensify airship building and which will make possible increase in propulsive efficiency by reduction of air resistance. And every aeronautical engineer recognizes this last as a vital factor in successful dirigible navigation.

The Paris-Lyons-Mediterranean Railroad is making successful use of the Renault tank type of tractor for haulingfreight cars in its yards', replacing locomotives and horses.

## USE JOHNSON'S CAR SAVERS and KEEP YOUR CAR YOUNG



MADE BY

## S. C. JOHNSON \& SONS



Johnson's Hastee - Patch - for tubes casings and rubber goods of all kinds.


Johnson's Black-Lac-the perfect top dressing. Easy to apply-dries in fifteen minutes-is a permanent, waterproof and inexpensive. Makes a shabby top look quite like new.

Johnson's Radiator Cement-seals leaks in two to ten minutes - in liquid form easy to use.

Johnson's Stop-Squeak Oil-a wonderful spring and body lubricant. Also takes out all squeaks. Reduces the liability of spring breakage.

Johnson's Auto-Lak-enables you to revarnish your car one day and drive it the next.
Johnson's Cleaner-will remove scum and grease and make body, hood and fenders look like new.

Johnson's Prepared Wax-for polishing
 body, hood and fenders-it preserves the varnish and protects it from the weather.

## HUDFORD GARAGE

(DODGE \& SEYMOUR (China) Ltd.)

Agents for China

89-91 Rue Montauban, Shanghai.

## CAR PAINTING ISN'T DIFFICULT

An Explanation of the Ways and Means Simplified for the Motorist

MJitelik hav hern wapped about repainting an automohile. Iny man with a little time and the
 either, but will rival the work of amy profesomonal if a litle care and a little imseligenco ane used.

The paint on at car is composed of there principal pata First, the priming or fondation, second, the color and thise, the covering or protective coating. The foundation merely gives a smonth base for the anplication of the following ceats. The color is composed of a number of thin coats rubied smooth and gives the body of the job. The protective coat is a thin hard coat of transparent vamish which protect. the softer coloring material from the inroads of the weather. If the protective coat is kept intact, the color coats will maintain their original brilliancy.

The amateur who does his own work will not have to start fresh, because a large part of the work is already done for him. It is only when the paint on the car is very badly damaged that the foundation or priming work has to be done over. But assuming that this is the case, the entire surface shonld be gone over and rubbed smooth by means of fine sanapaper. Before the sand-papering is done all the grease should be washed off the car with a good scouring soap, followed by a thorough washing in cold water, leaving the surface clear of grease and from all trace of the soap. All breaks in the surface of the former paint should be coated with paint and then filled with putty, allowing this to dry for a full day before touching it again.

All the retouched spots, and in fact the whole body should be gove over again to see that the surface is level. Fine sand paper can be used for this, and to be absolutely safe, the body should again be washed with cool water to remove all trace of dust and dirt from the surface. You are now ready to apply the color paint.

The color coats'should be mixed very thin. The thinner the coats and the greater the number the better the job will be when you are through, and, of course, the longer it will take to do it. After each coat you should let it dry thoroughly and then go over it with pumice, rubbing down all the rough spots that you can find. The pumice comes in powdered form and you can get it in any paint store. After the last color coat is applied it should be allowed to dry extra weil. The coats number anywhere from three to thirty, depending on how well you want to do thè job.

A coat of color varnish, explained later, is now laid over the color coats of paint and allowed to dry, after which this is rubbed down to absolute smoothness and any striping desired is applied. The striping should be covered with a couplc of coats of rubbing varnish, and rubbed down when dry with the pumice and water paste, after which two coats of finish varnish are carefuily and smoothly laid on. The

## NEW NOVELTY IN TRUCK PAINTING



J'arel!! for aderetising an American grain dealer tried out this aleckerboard effect and he sulys it is a paying asset
body is now fimished. Be sure that all this work is carried on in a dust-poof rcom, and it is better to have the room dark.

Preparing the chassis is a matter of geiting rid of all grease, as the faint will only adhere in the clean spots and a very bad job will result. First scour with warm water and grease cutting soap. Then go over it again with turpentine, and finally with a strong solution of washing soda, finishing with a good rinsing with cold water.

When this is done, proceed with painting exactly the same as with the body, except you can get along with two thicker color coats instead of a large number of thin ones. Be sure that you prepare the chassis with a smooth foundation before applying the color coats. This is done with putty, as with the body.

The other metal parts about the car (such as the fenders, windshield, lamps, radiator, etc:) are all handled in the same way as the body and the chassis, care being used to first secure a smooth surface to work upon, and after that the paint and finally the varnish are laid on in the manner descriled for the body and chassis.

The color varnich which is applied to the surface before the finishing coat is simply a mixture of the particular color with varnish. The mixture generally used is about onequater pound of color to two pounds of the varnish.

If a more thorough jcb is necessary because of the bad condition of the original paint, it will be necessary to scrape off the paint. Or, if the color that the car is to be painted is different from that which the car was painted before, it will also be necessary to take off the old paint. The best way for the amateur to do this is to buy a good paint remover and then follow the directions given with it. . If he attempts to burn off the old paint with a gasoline torch he stands a very good chance of destroying the entire body. Unless you are an expert in the use of the torch, do not try it. You will have to scrape in addition to using the paint removing chemical. After the raint is scraped off it will be necessary to bring everything to a fine finish with sanapaper.


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## CLEVELAND CUTS PRODUCTION

Many Workers Idle as Shops Cut Down Staffs and Hours



 are coming fiom other cities and alle offering w tek polle at lower wages. This development, which hat: © An abomt in the last month together with the decision in this city ijy bituminous opcrators io bring abom the elimmation of moreasonably high prices for fuel, are accepted as evidence that the antomobile industry, as well ats all other industric: are going to get back on a stable lusimess basis much quiker than was expected.

In the metal trades, factory and office forces have been reduced as mucb as 50 percent in certain shops: others have rerluced labor forces 35 to 41 percent. In the plants making automobiles and automobile accessories labor cuts have been made. Most of the local plants making structural shapes, such as autonobile bodies, have cut at least 2.) percent. Screw works have laid off 20 percent of their men: 50 yercent cuts were made in some of the gear turning shops.

Cancellation of certain orders resulted in the laying off of 1,200 men in an automobile accessory plant. Thirty to 35 percent of the employees in twenty Cleveland foundries have been laid off. This affected 2,200 men, most of them molders, core makers and their assistants:. Men remaining in the shops are speeding up production. One foundryman says that after he cut from 16 to 10 men his production remained the same.

It was reported that many shops operating i.5 percent of normal to-day are really doing so with 65 to 67 percent of the men needed six months ago. Employment managers of several large factories report that where a few weeks ago one or two men would apply for work, 200 ncw appear. One employment manager says that three months ago he could not get a man, while to-day 200 apply every morning, many of them fine mechanics.

An investigation fails to show extensive wage cutting. It has been done in some instances, however ; in one plant where it was tried, 90 percent of the employees affected by the cut decided to remain with the company.

## Prepare Your Car for Winter

(Continued from Page :3:)
alcohol to five gallons of water. A 30 percent solution will stand zere, a gallon and a half of alcohol to five of water. A 35 percent solution, or seven quarts of alcohol to five gallons of awater, is good for nearly 10 below. A 40 percent solution, two of alcolol to five of water, is good for 20 below, and a fifty-fifis solution mill not freeze until it is about 33 below, which is right nippy driving weather.

It is not the part of wisdom to figure too closely on llus. whtmions, for the alcohol eraporates: more or less all the time, and if after running a few weeks the temperature should drop to the limit of resistance of the original. mixture, it is highly probable that an exposed radiator would freeze up because of the weakening of the liquid. S.. it i- ! e:t not only to be a little generous when making Hh mixture, lint to maintain its strength by adding half water and half alcohol when repleniuhing the system. There are mant owner's who depend upon their good noses to tell them the state of the solution, comparing sniffs. from time to time with a good sniff taken when the radiator was first filled. The accuracy of this method is possibly open to a little doubt because it is bound to be affected by the temperature of the solution and the working efficiency of the testing instrument. The safe thing is touse a little hydrometer with a specific gravity scale, and it is advisable to get one that can be vouched for as being correct. In fact, some of the cheaper hydrometers are aliout as useful in this sort of service, as the sniff test in the influenza season. The following table gives the alcohol solution referred to and their readings on the specific gravity. scale :
Solution Point Gravity

20 percent 13 degrees above Between .97 and .98
30 percent Zero . 99
3 percent 9 degrees below Just under .96
40 percent 20 degrees below Just over . 95
je percent 33 degrees below Just orer . 93
These readings are not chemically exact, but they aresufficiently accurate for the purpose.

Before starting out on a cold day, it fays to let the engine get good and warm, for once outdoors it will increase its temperature slowly, unless it is too well covered. It takes a little time for the heat to reach down into the oil. which, for effective lubrication, should flow normally.

Tires are apt to suffer more in cold weather than in warm, in proportion to the mileage made, not only through the action of hard frozen mud in the roads, which has a severe abrasing action on the rubber, but also through the entrance of water or mud into the cuts and cracks. The water freezes and thaws, and the alternating effects are very likely to start trouble from a small beginning.' Cuts and cracks should be filled with more than usual care.

It would appear logical and extremely sensiblle for the awner of a private garage to have a heater capable of warming his garage to make it really comfortable to work in. In a well-warmed garage, it is no more of a hardshif to give a car the attention it needs than it is in summer. The practice of ronning the engine to warm the garage is one that is distinctly dangerous, because of the gas from the exhaust. These gases are capable to causing death in extreme cases-and it is not worth while to gamble one's lifeagainst the cost of a heater.

## The

Angulsfanderson 14 H.P. de Luxe

## CLAIMS THAT HAVE BEEN PROVED.

## STANDARD 4-SEATER

Equipment Includes:
Lucas Electric Lighting Set,
Lucas Electric Engine Starter, Five Wood-Milne Tires, Five Detachable Corrugated Disc Wheels, Five Lamps, and a luxurious Four-Seater Touring Body of the finest possible workmanship.

It was the actual principles of manufacture as originally outlined to the leaders of the Motor Trade which assured the success of the Angus-Sanderson car from the first. They knew those principles to be fundamentally sound.

But it has been the proving of those principles in actual practice that has crowned its success. Since settled regularity of deliveries has been maintained and the public have had the opportunity of seeing and actually using the Angus-Sanderson car, the claims which were originally made for it have been more than adequately substantiated.
'The unanimous opinion of the trade, the press, and the public at home is that the Angus-Sanderson car constitutes the greatest value that money can command.

Immediate Deliveries

## CENTRAL GARAGE COMPANY

Exclusive Agents

2a, Jinkee Road.
SHANGHAI.

"Boost for Good Roads in China"

## NEW PAIGE FEATURES PERFORMANCE

## New Engine Has 70 Brake Horsepower-Bodies Changed



Looking at the now I'eige from the fromt

FEATLRED by a new engine develoging To bake horsepower, the newest Paige big six is fitted with new bodies of most pleasing lines and finish. While Paige has gone in for exterior appearance to a great degree, this new chassis has been developed to a point equal to that of the bodies. The ferformance of the new sar is bevond that ordinarily expected. This applies to road speed, acceleration, hill climbing, etc., in which the new car shows some very startling results, obtained rimarily by the use of a new type of C'ontinental engine. Three bodies we being mounted on this chassis.

Lines of the familiar Paige hood have leen somewhat altered in this series. The radiator has been raised slightly, thong the fomiliar shape has been retamed. Fxom the corner of the radiator shell a straight line has been carried back, forming the top of the body sides on the oren models. The uffect is a very cle:m design. Tmmediately noticeable on these new open bodies is a three-piece mindshield with a solid aluminium frame to carry both the front vision glass and the tramgular side foces. The consthation appeatis

The new Paige Sportster
to be substantial and the side wings, hesdes leving unipue and sightly, afford protection t, fatas. nger in the tront seats. .



The new l'uige Big Sixe of the Larehmont type

A second cowl is fitted at the back of the front seat on both open models. In the seven-passenger car, known as the Lakewood model, this second cowl carries the two extra tonnear seats when folded, as well as a tonneau light. The space in the sport model is used for two lockers provided with keys. On both cars the tonneau light is provided with a cord on a spring reel and may be removed from its socket for use as a trouble lamp.

The sedan. body on the same chassis is a sevenfassenger finished in brown broadcloth with vanity case, smoking set and window molding finished in walnut. All


The Puiar Bi!! Si., Solden ix "treming combination of straight lines (1). 1 arters
windows are fitted with mechanical lifts. Besides a dome light, dash light and rear quarter reading lights there is a :tep light at the hottom of the right rear door. A cowl rentilator for the front seats and a heater in the tonneau Hoor are standard equipment. "Macbeth lenses are also Imoniler low the hadlighta.

Firestone cords $33 \times 4 \frac{7}{2}$ are fitted on all three models. Standard finish is Paige blue with black leather upholstering on the open car. An alternative color scheme is offered for the four-passenger Larchmont II model, grey moleskin being used as a body color, with rich deef red pencilgrained leather urholstery.

There is no secret in the success of the "Karrier"; it is just due to a unique policy in motor vehicle manufacture which never will tolerate the secondrate or next best.

The integrity of "Karrier" construction and design is based on this vehicle's unimpeachable quality. That is why the "Karrier" is known as the more than usual lorry.


A typical 4-ton "KARRIER" lorry fitted with flat body. Note the commodious, weather-proof cab.
The "KARRIER" is the more than usual lorry. What has made it so? Why the "Karrier" policy of production, which has ever recognised the fact that the success of the future depends on the success of to-day. That to win success and keep it, you must give something better than the next best. That quality must be the deciding factor in the selection of materials, in machinery, and workshops organisation, in assembling, erecting, testing and finishing, the best in everything must come first.

## Write for Catalogue

## KARRIER MOTORS, LTD. KARRIER WORKS. <br> HUDDERSFIELD, ENG.

The feature of the newest Paige chassis is a $3 \frac{3}{4} \mathbb{X}$ I-head, six-cylinder Continental motor with a four-bearing


The Small Six " Glenwood" model
crank-haft, ahminium crankease and detachable head. The power curve of this motor shows a power delivery ower the ratge of normal driving seeds which is remarkable. It
 hoor) 29) horsepower is developed. At low greeds in high gear the bew eat is said to show an untsual pikill, reat test showing an acceleration of is to 2.5 miles per home in
 home (i2! ! make hompower is developsal, while al 2.3 an revolutions fer minute (corresponding to a road peed of it

road sfeed are oltamed with a rat axle own ratio of 4.5 . 5 to 1.)

The firet lipment of the Big six in Tomrinz, Fimb-ter and Sport models i: now emonte for th. Wher (hale






 (lama and Incati..


ACID'S EFFECT ON OIL<br>Cleveland Warns Against Low Grade Gasoline Condition

The makes of the ('lereland car have issuct a bulletim to all their dealers and distributers which says:

The por grade of gatine that the public is compelled fo use at the present time camot be thoromghly raporizect. The unvarorized gasoline is forced down past the ristons into the crankcase and when mixed with the cylinder oil, after it has loceme heated, fomm arit. This is 1 rinsipally sulphuic acid which immediately atteke all morking parts of the motor and especially the nickel in the timing chain and destroys it very quickly.

It is alsolutely necesony that the onl wewnoir be Armined at the end rif each jof mikes to prevent an exe swive amoment of this aced frem coflecting in the oil reerroir.

This acid situation is so :erious that the chain mannfacturers are contemplating the voiding of their guarantee unkess the oil is changed priedically at the end of each soo miles.

We have just completerl ande intereting teves showing that on a moitor when the oil had not heen dramed in 3.000 miles roming, the tming flain and motor pats show:d five hundred percent more wear than the same parts on a motor that the oil had been changed every 500 miles for the same mileage.

France Taxing Motors to Death<br>(Continued from Page 66)

$B$ ahore, the recaipts from which are put into a common fund which is divided among the departments.

There still remain the communes or towns. Thear formerly had the right to collect octroi taxes on all kinds of merchandise entering their gates, but by a law passed in 1897, they are empowered to impose a direct tax on automobiles taking the flace of the octroi duty. Under the new law this local tax must not exceed 50 percent of the mational tax, except in certain cases which it is unnecessary to specify here.

The above covers all of the direct taxes to which an automibile awner is subject, and there remain only the indirect taxes, which, however, are far from negligible. T1 1 to the time the new tax law was adorted (June 25, 1920) the French Gevernment collected an import duty of 10 francs per hectoliter on gasoline. In addition to this the new law imposes a consumption tax of 20 franes per hectoliter. Then, gasoline is still subject to octroi duties, which in the case of the city of Paris amount to 20 francs per hectoliter. This makes the total tax on gasoline 50 fracs per hectoliter or 36 cents gold per U. S. gallon (nominal rate of exchange)

It will be noted from the abave that the taxes are es. pecially heary on piston displacement, and this couints against American cars in France. The smallest tax class

## FRENCH EXPORTS INCREASE

## Reports Show Tendency to Come Back Very, Rapidly

Fronch automotive exports are increasing rapidly, as shown by the returns ly the Ministry of Commerce, just issued for the first eight months of the present year. During this period France exported automotive goods to the value of $(\mathrm{G} . \$ 150,342,400$, being an increase of $\$ 139,(517,204)$ on' the carresponding period for 1919. The biggest single item was for passenger cars, which totaled. $\$ 2,582,000$, trucks coming second in importance and airplanes third. Automobile tires are not given in the official figures, although big business bas been done in this branch of the industry.

During the same period autcmotive imports have dropped by G. $\$ 19,800,000$. Trucks are the b ggest single item, bicycles coming second and passenger cars third. The motor boat item is largely made up of temporary importation of beats for the Nomaco boat races last spring.

The following are the official figures for the first eight months of 1919 and 1920 :

## FRENCH EXPORTS FOR' FIRST EIGHT MONTHS OF :

|  |  |  |  | 1919 | 1920 |  |
| :--- | :---: | :---: | :---: | ---: | ---: | ---: |
| Automobiles $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\$ 4,020,000$ | $\$ 100,459,200$ |  |
| Automobile Trucks | $\ldots$ | $\ldots$ | $\ldots$ | $2,582,000$ | $41,335,000$ |  |
| Automobile Bodies | $\ldots$ | $\ldots$ | $\ldots$ | 109,600 | 601,000 |  |
| Motor Cycles $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 49,400 | 462,000 |  |
| Bicycles with Tirés | $\ldots$ | $\ldots$ | $\ldots$ | 861,600 | $2,613,800$ |  |
| Airplanes | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $2,747,200$ | $4,129,000$ |
| Flying Boats $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 106,000 | 156,200 |  |
| Motor Boats $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 6,600 | 345,800 |  |
| Spherical Balloons | $\ldots$ | $\ldots$ | $\ldots$ | 142,800 | 140,400 |  |
| Airships | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots \ldots \ldots$. | 100,000 |
|  |  | $\ldots$ |  |  | $10,625,200$ | $150,342,400$ |

french imports for first eight months of

|  |  |  | 1919 | 1002 |  |  |
| :--- | :--- | :--- | :--- | :--- | ---: | ---: |
| Automobiles $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\$ 4,561,400$ | $\$ 2,364,000$ |  |
| Automobile Trucks | $\ldots$ | $\ldots$ | $\ldots$ | $50,052,200$ | $32,713,400$ |  |
| Automobile Bodies | $\ldots$ | $\ldots$ | $\ldots$ | $1,065,200$ | $1,129,400$ |  |
| Motor Cycles $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 832,200 | 233,200 |  |
| Bicycles with Tires | $\ldots$ | $\ldots$ | $\ldots$ | $1,122,800$ | $2,876,600$ |  |
| Airplanos | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 497,800 | 3,800 |
| Flying Boats | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 58,000 | $\ldots \ldots \ldots$ |
| Motor Boats | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 17,200 | 86,400 |
|  |  |  |  |  | $58,206,800$ | $39,406,800$ |

is that of It h.p. and minder, and all Mmerican cals lall in one of the higher claseses. The ford (ar, for insturee, is rated at 12 h.p. liy the Fromeh authorities, and how this affecte the tax is well shown hy a comparionn made I! one of our Premels antempmane, whish calatates that
 conreyonding to the two cases, it small 10 l h.p. fourgatisenger cas wrald pay ammal laxes, diesed and indined,
 Fored. Fiome years ago this latter sum was combitemalls more than was paid for a lourd in Ameriag.


## The Day of The Closed Car

Formerly, motor car boclies had their sea-sons- the touring car in summer and the limousine in winter.

To-day, the closed car is an all-year car and is the practical one for all scatsons.

MILBURN ELECTRICS have always been closed cars and present weather-proof bodies against cold, rain, snow and winds as well as sun shades in the summer.

This means that yous s̛ot the combincel comfort of a touring car and a limousine with but ume inse-tment in alloblon, and the caty applex.lton of this comblon comes only from call purdarsins.

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SHANGHAI
IND
oUTPORTS

$31 \quad 311$


The

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## A SMOKE DE LUXE

THAT WILL
SATISFY

## THE

## REGULAR CLUBMAN.

## NANYANG BROS. TOBACCO CO.,

## LIMITED.

## A Word Tour Through the Ford Factory <br> (Continued from Page fy)

building " to the shipping platform. Here is also a chain elevatcr, whicis raises the wheels out of the freight (ars to a runway on which they travel by gravity to the third floor of the main factory. With this device it is possible for three or four men to unload about 6,000 wheels each day.

One passses the loading docks, where crews of six to eioht men each, working as a unit, remove the bodies and wheels from the chassis, and load them into freight cars. So proficient are these loaders that a freight car is loaded in 20 minutes. Approximately 150 loaded freight cars are sent out every day. Besides these factory shipments there are more than 300 loadod freight cars in transit each day from 28 branch factories.

The bodies for home agencies are shipped separate from the chassis, being stood on end in one half of the car and protected from dust by coverings.

The chassis are $r$ ut in the other end of the car. The space in the center of the car contains the fenders, and other removable parts of the equipment.

Just beyond the loading docks is the Foundry. The Foundry is one of the most interesting divisions of the entire Ford Plant, and ranks, perhaps, as one of the most unique in the country, as far as practice and equipment are concerned. This department works 24 hours a day, in three shifts of 8 hours each ; iron is being melted and poured continuously during the day and first night shifts. An average of over 400 tons of iron is poured daily, and 426 tons of gray iron have been poured in a single day. This tonnage is especially interesting, as it is produced on a floor space of only 36,324 square feet.

All the aluminium parts of the Ford car, as well as a large proportion of the brass, are also cast in this foundry.

The Ford process of heat-treating steel forgings before they are machined is one of the most scientific and accurate features in the manufacture of the Ford car. The famous Ford Vanadium steel is used throughout the construction of the car. It has been found from long-and deep experimental work by the Ford engineers that the structural condition of steel may be changed by the application of leat, and with certain conditions ascertained, by bringing a piece of steel to a rertain temperature, and then setting the molecular condition in the steel by sudden cooling, or quenching, that the steel of a crank shaft can be made to stand impact, that the steel of a front axie can be made a most efficient agent to withstand vibration. The HeatTreating department centains about 75 large furnaces, which consume from 5,000 to 6,000 . gallons of fuel oil per day. It is into these furnaces that the various forgings are placed for heat-treating. In this department are also located many grinding wheels and tumbling barrels, similar to those used in the foundry, so that the various forgings may be put in first-clasis condition before they are laid down in the machine shop.


Lining up for the final inswo.....
The operations in the manufacture of the crank case or engine ran, of the Forl wotor is of interest for seraral reasons, and the visitor has the oppcrtunity of viewing thess poceses. The crank cave in itself is interesting lecause it is made from dramn sheet steel, instead of cast aluminium, as was once thought necessary. The presses on which these crank cases are drawn are especially worthy of note, for they weigh about 50 tons each, and exert a downward pressure of about 900 tons. It is neeessary that this drawing be made in frur operations: the firt and second are particularly interesting, on account of their denths, which are $5 \frac{1}{2}$ and $93 / 16$ inches, respectively. After each drawing operaticn it has been found neceromy that tha che be annealed, to restore the strained or calloused surface produced at certain points by contact with the dies, to a soft ductile condition, to conform to the balance of the case, or in other words, to produce a hcmogenous condition of the surface.

Thie annealing is accompli-hed 1 y a furnee therogh Which the ca.es are proted ly a dain cobveror onto all elevator which raises them up through the roof, and down again, depositing them near the press, which is to perform the next drawing operation. While moving on thi- - lowetor
 they are lowered.

After the drawing operations have been completed, the




Sem the crank case presses an locul I ...ynat




 lighter in weight. While the company has specialized in

 ford I'roft-sharing I'lan, -hecialising in nam

## MOTOR CAR

## INSURANCE

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 CONPANY, LIMITED(ASSETS OVER $\& 24,000,000)$
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Picture on right shows tire before retreading-ori left in vulcanizer after retreading. 10 years' experience with a large concern in America is behind our work.

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## NEW LINES IN GERMAN SHIPS

Dirigibles For Commercial Use Being Constructed by Tenton Works

Th:c (iomman Fodemeec and the Nordstem dirigibles, un! the I Fol, the latest type of divigible built by the
 have frames made entirely of duralumin. The transverse rings of these dirigibles are of polygonal shape. The IJodensee and Nordstern have 17 sides for each polygonal ring, and the $L T 0,25$ sides. The distance between the consecutive rings of all these dirigibles is 5 m . ( 16.5 ft .). The gas compatment: ate 15 m . ( 49.3 ft .) long in the L Fil, and 10 m. ( 32.8 ft .) long in the Bedensee and the Nordstern. At the end of every gas comprartment, metallic cables are diametrically stretched across the ring, so as to forn it dividing nall between the two adjacent compartments. A gangway extends from one end of the ship, to the other, I ft. above the lower sides of thess polygonal rings, so that it is possible to walk across it inside the envalope. At a height of about $2 \mathrm{~m} .(6.55 \mathrm{ft}$.) above this gangway, a rigid beam, supported by trestles located in the same plane of each zing, and having the form of an isosceles triangle, extends longitudinally, the beam being lastened to the vortex of the triangles.

Water and gas tanks are lecated all along the ship, on both cides of the gangway, and thore ore also swinging chairs for the crew. In the $L 70$, in the center of the ship, slace is luorided inside the envelone for a table and chairs for the crew when off duty. From this gangway admission is had to the variote natelles by a ladder of rather ingenious design. One of the two side-pieces of this ladder is stationary in a vertical position, the rungs being riveted at each end to the side-pieces so that they can rotate about the pivots to which they are attached at the stationary side. When the ladder is not in use, the mokile side is lifted up and the rungs are thus folded up, taking a vertical position. When the ladder is thus folded, the two sides take the shape of a vertical strut of streamline shape.

Aother interesting point of design is found in the front part of the nacelles, where the radiators of the engine are installed. This front end of the nacelles is masked like a helmet of the Middle Ages. An upper and a lower shield (an be iffted so as to expoe the radiator inside, or can be partly or entirely closed, thus regulating the draft of air through the radiator and decreasing the air resistance by closing up the miask altogether in front of the radiator when the engine is not used. Six Naybach $260-\mathrm{hp}$. engines are p!evided ; two on cach side and one at each end of the ship. The nacelles containing the end engines are on the ground level when the ship is on the ground ; the lateral nacelles are located above the ground-line.

The diameter of the propellers of the lateral engines is 3.2 m . (10.5 ft.). The diameter of the propeller of the end machines is 5.1 m . ( 16.7 ft .). The nacelle on the front of


The ship contain not only the engine but also the oommander＇s cabin，where the nevigating instruments and mgnaling devices are kept and the wireless station also is located．The rudders can be maneuvered from the commander＇s callin，or from an auxilialy past inside the envelope，in caice the main post should become disabled．

The accompansing table gives general data regading tho 1． 70 class dirigible．

Maximum diameter
Length
Cubic contents
Useful load
Number of men in crew
Maximum speed
Maximum weight of gasoline carried
Timo of flight at maximum spoed with maximum weight of gasoline and no wind
Tha Thodensee contained orimitally 20，000 an．II
 of 10 III ．（3：38 ft．）Was added bight int the exmere，and the
 ＇Ihes maximum diamedor is 18.7 m ．（i）！R1．）．It has fom




[^52]
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Hotel Motor-Omnibas and Porters meet all Trains and Boats.
Cable Address "ASTOR"
THE MANAGEMENT

## Motor Industry of China's Northern Port

## ('ontinuth from P'age 9)

Velik', ('lahlumes (ays and Denby and Bethlehem trucks. (hina Ancrican Trading Co, Ine, handling Ford Overlond. Willss. Hhewon and Eseex cars and White trucks. Perrin, Cooper and Co., English cars. Jardıne, Matheson and Co. (agents for Honigsberg and Co.,. Shanghai and Peking') Cadillac, Buick, and Chevrolet. "Tientsin Motor Co., handling Paige products. Garage Central, dealers in Renault and other French makes.


Woodrow Wilson Street, Former German Consession, Tientsin
The number of cars registened with the British Municipal police is 501, alsout half the automobile population of Peking. About fifty cars, belong to officials and municipalities operate without licenses. It is estimated that there are actually running in Tientsin at the present time about six-hundred cars. Most dealers are at present carrying large stocks. The cause for this is the general depression of foreign business, coupled with the rising value of gold which has brought about readjusted prices to which the buying public have not yet become accustomed. An additional factor is the difficulty of getting railway shipping out of Tientsin an account of the heavy burden now carried by all the northern railways in the transport of faminerelief supplies. It is at present almost impossible to get shipping facilities for distribution of cars to the interior, Dealers report that the market for accessories has only begun to develop during the past jear, and is very encouraging, it being almost a fad with many Chinese owners to equip their cars with every latest product of this type.

Several quite substantial Chinese houses have sprung up, which are rumning service stations and hire services, and acting as sull-agents for the importers. One such concern is handling Michelin tires, and conducting a sales campaign with all the approved advertising methods of the home trade. The Chinese have practically driven foreigners out of the body-building trade. Thia rate of street hire is $\$ 3$ per hour, one dollar more than Peking on account of the high license expense in Tientsin.

A Chinese company has been operating, for the past year, a motor passenger line to Tongkou, at the mouth of the Hai river, which is connected with Tientsin by a dirt road forty miles long. It runs six Dodge cars and one

Maxwell, some cars being fitted to carry twenty passengers at a trip and some ten. The cars were sold by Frazar and Co., who built special bodies on the chasses. The road is very poor, nevertheless passenger service is maintained and two cars run daily in the cold season, all seven running during the summer. The charges are $\$ 1$, for the entire distance, and seventy and fifty cents for other distances. The line is run scientifically, a mechanic going over each car at each stop.

The company which maintains this service has also experimanted on a Peking-Tientsin interurban motor service, not competing with the railroad, but passing through different towns. One of its Dodges, on as trial run, made the 81 miles in five and one half hours recently, the Maxwell taking an hour longer. The record for this run is now five hours, held by the Ford. A half-hour's delay is always encountered ferrying across an unbridged stream near Peking.

Trucks, apparently popular in Shanghai, have as yet found a small market in Tientsin. Only three are in use apart from those of the Chinese post-office (which uses three Ford cars upan which truck bodies have been built). Dealers do not anticipate a demand for trucks until the Peking-Tientsin and Tientsin-Paoting Roads have been completed and opened.

The British and French now have motor fire engines and ladder and hose trucke. The British equipment is made by the Dennis people, and the French use a French make.

The present depression is the dark before the dawn of prosperity in the motor industry in North China. When we think that only nine years ago the first cars were imported, and that last year 327 cars, valued at 344,137 Haikwan Taels were brought through the Tientsin Customs, we must admit that a start in the establishment of the motor industry in North China has been made. Tientsin dealers have, within the past few years, pioneered the way in Peking, Kalgan, Tsinan (where the first motor vehicle made its appearance only three years ago, and where the advent of the motor-car has caused the construction of motorable etreets at immense expense), Chefoo, Harbin and other inland markets. All the industry waits for now is market stability and good roads, which are bound to come. North China, it appears, is going to sprout a system of lighways overnight, due to the incentive toward road-building given by the famine. It is an ill-wind which blows no good, and the motor trade need not feel that it is taking improper advantage of a calamity in profiting by this deplorable condition.

## MOTOR CARS IN BOMBAY.

Of the 5,292 motor cars that arrived in Bompy dumg the four months-April to July, 1900-nearly four-fitithe have come from the dinited states and tho remaining onefifth from the United Kingdom and ('antala. Shomi bit camo Prom Thaly and France.

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## MILBURN GAINING POPULARITY

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Combined Comfort and Uility

A Milburn Electric in front of a
chinese temple. Shunglai


AGRE:AT PRREDOMITN.INE of gisoline propelled motgr cans in china has cansed two little attention to be given to vehicles that employ other means of motive power. In fite of this fakt, howerer, electically drisen cars are increasing in their populaty as is shown ly the progess of the Mill,urn. The ele tric car is in many Wars an ideal car for the conditions in the port cities of China and will in the future attract more and more mopularity in the town car chass. The Milloum Light diectric is made in America; and represents one of the most advanced types of this rehicle. In days gone by electrically-driven cars were usually regarded as slow and under-powered, but the modern tlectric, as represented by the Jilloum, quickly dispels this fallacy. A distance range of 80 miles is provided, and on a level road $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. can ve obtained. Its acceleration is, quite equal to that of the standard gasoline driven car, while, of course, the inherent charactristics of silence and smoothness of running of the electric are very marked in the Milburn.

While its features are its simplicity and ease of control, equally attractive is the fact that, with the large whells and property-designed suppension sy:tem employed it is extraordinarily comfortable to ride in or to drive. Its ran-

Simplecity is the heryueter of the Milburn chassis. Butteries are not shomen but are monnter on rollars for commonence in replacement in
chun!!in! ama char!!in!

nung costs are low, and-a point which appeals to elderly matorists and ladies-it requires no exertion to drive or to look after generally.

As may be judged from the illustration, far more body srace is available on the chassis than is the case with petroldriven cars. The chassis itself, is a fairly light frame, the front axle being attached by means of semi-elliptic springs, while full cantilever suspension is provided at the rear. The propeller shaft from the motor, which is placed amidships, is enclosed in a torque tube, which is rigidly attached to the back axle casing. The motor itself is affixed to the fore end of this torque tube, and the bearing for the whole is a ball joint at the fore end of the motor casing. There are no gears, excepting, of course, the final drive, which is by underhung worm, and the mechanical parts represent extreme simplicity. Large wheels are fitted, shod with 34 by 4 cord tires, and, awing to the smoothness of the torque of the electric motor, all the mechanical parts of the car can be, and are, built lighter than is the case with the normal type of automobile, while a large margin of strength is still preserved. This smaothness of operation


A rear view showing batteries, back axle, cantilever. springs und brakes on back whecls

## BRING YOUR CAR TO US

If you are having tronble with your car bring it to us, we will put it right and Grarantee the Work.

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## SHANGHAI MOTOR REPAIR COMPANY

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ahas 1 monily giad, to the life of the car and woment of its par. .ng ats.

In A!"


 old-world grace and clarm in the lines of the coachwork.
















 1 futanio.




 sleeds reverse are effiorded, the variation in tractive effort









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I T IS more profitable to insure your car BEFORE a smash than afterwarls, Yo: have bought the most suitable car for your purpose now take out the most suitable policy to protect that car.

The "YANGTSZE" Policy offers the fullest possible protection and is the most generous to the car owner.

RING UP THE
YANGTSZE
INSURANCE ASSOCIATION, LTD.
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and ask for a prospectus.

## Clean-Comfortable CARS

## Competent-Courteous Chauffeurs

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## CENTRAL GARAGE

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## AIR CURRENTS

The inalguration of an air service between Peking and Shamgmi, with intermediate stations at Tsinan, Hsuchow and Nimking and the establishment of elghty landing grounds has receired the approval of the Cabinet. According to present plams, mail only will be carried for the first six months, after which time it is expected that public confidence will have been obtained making it possible to carry passengers and farcels. A monthly expenditure of $\$ 40,000$ is expected when the service is fully established. The line will be in charge of Chen Hung and Colonel Holt.

The Peking Cabinet, upon the recommendation of the Aercnautic Department has sanctioned the five main routes for air transportation. Student pilots are now in training and the machines for the services are under order from England, some of them having already arrived. The mail services will be the first inaugurated. The routels selected are: Peking-Shanghai route, via Tientsin, Tsinan, Hsuchow and Nanking; Peking-Hankow noute via Pactingfu, Shihkaichuan, Chen-Chow and Tsematien; Peking-Harbin route via Peiteiho, Chinchow, Mukden and Changchun ; the Peking-Urga route via Kalgan and the other cities; the Urga-Kobdo route with stops at two intermediate points.

A shipment of sixty-nine German planes, allotted as a part of Japan's indemnity for her participation in the recent war, have arriyed at Yokohama.

The first sear lane of Jananese make has been completed by the Aichi Electrical Machinery and Watch Company in Aichi Prefecture, and the trial flying will be made shortly under the supervision of the naval flying corps at Yokusuka. According to tht "Nichi Nichi," if the result of the trial flight proves satisfactory, the manufacture of machines of this type for the navy will be undertaken on a large scale. Work on the seq-y lane just completed was started towards the end of September by Lieutenant Umiya, a retired officer. Recently he was to make a trial flight, but the plan was changed and it was decided to send the machine to Yokosuka for trial by the naval officers. The new seaplane, which is designed to accommodate two passengers, measures three meters and a half in height, 15 meters and half in width and 10 meters in length. If naval orders are obtained, the management of the Aichi Electric Machinery and Watch Company expects to extend its factory so that machines to the number of 10 per month may be turned out. It is stated that the company has under contemplation a plan to manufactune motors.

Exports of automobiles and parts, including tires and engines, from the United States have in twenty years reach. ed $\$ 1,000,000,000$.

## TRY THIS OUT ON YOUR FORD？





## ARE YOUR WHEELS IN LINE？

Millions in Tire Service Lost Annually Through this Defect

Millions of miles of tire sictvice are lost anmually through misalignment of automolile wheels．Fuulty alignment can rasp away，before the owner realizes it，half to two－thinds of the selvice that is in a tire．

Although extreme cases are eacily detected by the way the car steers，slight cases are almost unnoticeable to the ordinary driver，even though they may be thieving hundreds of miles from the tires

This condition is not always tlie fanlt of bont axles，of broken springs，loose spring shackles，and sprung frames， but is due often to lowse steering linuckles，to bent pinions， to worn bearings and wobbly wheels．

Any fart of the rumning gear which has become wom or out of shape，is bound to cause undue triction on the tires．Frequent examination of car wheels for alignment will prove exceedingly profitable to the car owner，according to the experts of The Miller Rubber Company of Akron， Ohio，U．S．A．

The wheel aligmment proposition has come to be of such vital importance in the tire industry that service stations and gatages are putting in mathones to text aligmont white the cas owner is gimg gateline or oil． The day is not far distant when this seevice will rank with air service in the tire slopp．

## WHEN THE BRAKES HOWL．


 material gresent：a mather hated surface to the med 1 demme．





 squaking．

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ir．The above Goods are manufactured at our II own factory，Satins can be made to order from路 the Silk of any Province．Flowers of latest 緞 \＃patterns and in a lange rariety．Satins and 作
\＃Embroidery for Laties＇use always in stock at三 moderate prices．
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OLD WORLD IS DEPRESSED
English and French Makers Are "Down in the Dumps"

The course of the autumetive induntry is 1 mining a remarkable parallel in the Coited states, Englend and France. General industrial conditions in all three comntries are almost identical and the process of readjustment which is now under way in America has brought the same depression in Fingland and in France. Its ramifications are world wide and they show that all nations are striving to retirn to a nomal basis after the inflation resulting fiem the war.

While in their broad aspects conditions, in England are the seme as those in the United States, England is in a more serions plight 1 ecause lahno is intrenched to a grater degree, and as a consoquence mamufocturs are more at its meras. Trade unions are able to coforce them demends no mattor what the effect mex he mon theit empiogers. England, probally, is nearer to a wowntim today than the Enited States ever will he. "Herolution," in the sense in which it is used in England, does not mean com-
 accept Jelshevism, and the latore lowne of Englund are men of broad vision.

Automobile manufaturers, loih in Fnglan $h$ met Frome, are thorcughly discomaged. It whe diticult for theme to wet from a war to a peace ba-is, and they never ratly hate goten into their stride, as wite Now they als (onlfonted with the bogey of lower prees for Amernem (on- which they feur will necessitate a still further curtailment of production. Sales resistance in Englond and in Foance, as Well as in the l'nited Stater, is the result of tha datemmme tion of the pullic not to buy anything except absolute es. sentiels until prices come down. The orgy of extravagance whick followed the war ended some month- ato.

Motor car sales have virtually ceated anl crom Fords, the last to be affected, have suddenly become almost dead
iecense of cubles roporting prices reductions to pre-war levels in the United States. Everyone takes it that this means pre-war prices in England very quickly. The papers are carrying every day paragraphs about cuts in the prices of American passenger cars and trucks.

The cne hope of English manufacturers is that the Oly?ia show may tend to stabilize conditions somerwat. It is felt that prices should become firm again at that time and that the show will give the public some new ideas. At Inwont forquective luys expect to get cars at 25 percent to su percent off presint pices. Nothing hke the present condition bils leen expelionced in the histely of the industry in Eogland.

The mency sitmation in England is similar to that in the [nitul itates. Thercally is an immense amount of ready coth in inc combty, but the people won't spond it. Partly I Compo (t latcr thouliles prechs with a few hundred or a few thousand pounds are keeping it lacked up. The banks bave shat dewn on loans to manufacturors. This is partly in the he 10 of lillimg the excers procits duty, but partly with the iclibwate inlention ci weeding out weak firms and lewing remu fre stroner ones. Another factor governing the lank: -tand is that they are net inclined to let money all whilc ther is talk of genetal strikes and revolutions.

English automolile monufacturers have not yet taken any ation te fruent the impostaíon of low juced Amencan cars, and there are no indications yet that they will f.llow the cxamp of their Frensla brethren. The industry in It nit heont hegun to recorel from the effects of the revolutienary strike, and it is difficult to forecast when it will. Binion hembinctures ale leginning to complain about the importation of cheap American cars and are threatening to call upon the Government to protect them.


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"FERIMOGAS" BLOWS UP<br>Inventor Gets Arrested for Misappropriation of Func's

Gasoline substitutes may come and gatoline suhstitutes and Col. Samuel Jones, said to be experts af the West may go, but gasoline goes on forever. With the arret recently in America of P. J. Chasler, the heralded "wizand" chemist whose Fermogas was intended to send the gasoline kings to the poorhouse, another most promising substitute for the high priced fuel has been exposed to doubt. The specific charge against Chasler mentions misappropriation of funds, it being charged that a $\$ 5,000$ check tendered in payment for stock was deposited to the credit of an organization said to be Chasler's personal company. About 200 stockholders have since requested an investigation.

It will be recalled that last June Fermogas was revealed to the public as a very cheap and better tuel than gasoline. Its chief constituent wat akohol mal he be the "Nucorbacty" process, in which a specially beened yean was used as the femmenting agont. Mmot an! lined of vegetation could be used for fermentation purposes, included in the list being comstalks, sugetr cathe liept- 1. 1thon. in fact, vegetable matter of all kinds. 'Thic yant wた chimed to rield 24.9 times as much alcohol an ane - imilat rent known.
 proted recently at Ramsay, N. J. hy Tham T). If. (anelut

Point Military Academy. The officers put their approval on the test records but later discovered, it is said, that the corn-stalk, sugar and yeast concoction was aided in showing its results by two barrels of grain alcohol concealed behind wall and connected with the tank by a hidden pipe.

The $\$ 5,000$ check, intended in payment for 500 shares of stock in the Fermogas Corporation, was deposited to the credit of the Industrial Research Company, reported to be the personal property of Chasler, and in which company's laboratories in Brooklyn the initial demonstrations of Fermogas was given in June. Some 200. stockholders, either rersonally or by proxy, have requested the District Attorney's office in New York city to start investigations.


## PACKARD LOWERS SINGLE-SIX PRICES.

Prices of the new Single-Six line, recently introduced by the Packard Motor Car Co., Detroit, have been lowered from $\$ 665$ to $\$ 700$. The five-passenger touring and roadster models, originally priced at $\$ 3,640$, are now $\$ 2,975$; the coupe, formerly $\$ 4,835$, is now. $\$ 4,150$; and the sedan, listed at $\$ 4,950$, now retails for $\$ 4,250$. It is planned to merease production of the new member of the line through this price reduction.

## DE PALMA TO CAPTAIN BALLOT.

Ralph De Palma sailed October 12 from New York on the Aquitania for France to visit the Ballot automobile plant. He will captain the four Ballot racing cars which will be entered in the 400 -mile Grand Prix on July 4, 1921. These cars have just been finished and are awaiting De Palma's road test. It is stated that they have a speed of over 100 m.p.h. Their piston displacement is 183 cu . in. To date De Palma and Chassagne are the only drivers that have been selected to operate the cars. De Palma expected to be back in the United States by October 30.

## Honigsberg Opens Tire Service (Continued from page 54)

Mr. Giovannini, because of his previous experience in the Far East, advocates the use of straight side tires in preference to the metric or clincher type, also cords because of their better wearing qualities in this climate, over fabric tires.
H. S. Honigsberg and Co. will maintain complete stocks of Goodyear and Pennsylvania Vacuum Cup tires in metric and straight side types and both fabric and cord construction. To those car owners who are interested Mr. Giovannini will be fleased to explain the construction and repair of tires at any time as he believes that an understinding of these principles will result in the car owner taking better and receiving better service from his tires.

## U. S. HEADS IN EGYPTIAN MARKET.

During the period ending May, 1920, America exported to Egypt 675 cars, valued at $£ \mathrm{E} 190,786$, amd 111 motor-cycles, valued at $£ E 10,960$, as compared with 42 cars, at £ £ 7,885 , and 6 motor-cyclos, £E520, in the stme period for 1919. In the same period of 192) (1st Jimuary (o) 31st May) England oxported to Hegpt 533 (atrs, at £645,629, and 19 motor-cyclos, at $£ 48,349$. Tho durability and fimish of British cars are fully recognizen, but high prices and uncertainty of delivery presludo ordows.


## HAUL BYTRUCK



## DEPENDABILITY

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"Boost for Good Roads in China"


NO NEW MODELS FOR OVERLAND
John N, Willys Denies Reports That Are Current in U, S,

John N. Willys president of the Willys-Overland Company recently took occasion to deny a report current in the U. S. that the Overland is at work now on new model cars to be placed on the market, or that the company was plaming to revise the model 90. Willys eaid unustually good sales for Overlands had continued during recent months in many districts, particularly in New York and

## SANDING MOTOR TRUCK TRACKS



Sand carrying devices to get traction on slippery roals with heavy loads are now for trucks in America
the East. Willys sees promise of betterment of present business conditions and predicts a rally from the slump of the past few months after the first of the year.
C. A. Earl, vice-president of Willys-Overland, in denying reports that the complany would stop production on the Overland Four, declared he was becoming tired of issuing denials of the many rumors that were being spread around the country regarding his company. He said there was mo truth in the report that General Motors would take over the Willys interests, denied that it was the plan to stop production on Overland Four, and move the Chevrclet from Tarrytown to the Overlan 1 factory, and denied absolutely that the Overland company was being compelled to pay Ford Motor company a royalty of $\$ 100$ a car, on account of a patent infringement.
'Just say for me that Overland is in production and that our sales for the past few months have been gratifying, in consideration of the slump and its generally bad business conditions," said Mr. Earl. "Of cource, no one can foretell the future, but we look for better business within the next few months, and with a hard, steady $£$ ull, I am confident the industry will come through in good shape. As for Overland, I am not the least bit discouraged as a result of present conditions but rather gratified at the outlook within the next 90 days."

THE fame of the Small Six five-passenger "Glenbrook" has traveled all over the world and this car now occupies an unchallenged position of leadership in the field of five passenger vehicles.

Designed and built in the Paige shops - and powered with the new six-cylinder motor-it surpasses every standard heretofore accepted as the best in light six motor cars.

Compare it with any five-passenger car on the China market today and determine whether it is not, indeed, the greatest dollar-for-dollar value in the light six field.


The Most Beautiful Car in China


SMALL SIX 5-Pass. Model in StockWire, Disc or Wood wheels optional Coming; Sedan and 2 \& 5-Pass. Sport Models.
BIG SIX 192: Models Enpoute-
7 Passgenger Touring and Sport Models. Town Car 7 Passenger in Stock.

Exclusive Agents for Central China DONG CHONG BICYCLE COMPANY
P. 346 Nanking Road

New Lines in German Shís
(Continued from page 87)
ft.$)$, and the rear one 5.1 m . ( 16.7 ft .) in diameter. There are auxiliary posts inside the envelope, as in the L 70 , for marleuvering the rudders in case tho main pcest should be disabled.

At the lower front end of the airship a cabin is provided for 20) passengers. This cabin is divided into several compartments ; the front one is reserved for the commander of the ship, and the navigating instruments and signalling apparatus are installed there. Right lehind this compratment thore is a socond one for the wireless plant. A third snall compartment comes next, where a kitchenette and a lavatory are to be foum. The fourth and last emperment is rewerved for the passengers. who are seated in two rows on each side of the cabin and can look out through windows

Under average conditions the spoed of the airship is frem 130 to 140 km . per hr. ( 81.5 to $87 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.$) . The$ gasoline on board is suffic ient to cover a distance of 1.500 km . (9330 miles). The ainship bas been flown between Fried bichshafen and Berlin, a distance of about (i0) km . (370) neiles), the price charged for cach passenges. (abhin, whew accommodation is providod for 30 pas-in Octoter end November 1919. It has been flown also between Bertin and stockhohm, about 620 ) km . ( 384 miles), the prico (hatged per passenger beiug 300 Swodish crowns. Lach passenger

RUNNING A TRAIN ON TIRES



 athd 30 miles an a hativery


 Novimber.



 Seromation of the l. .s. . 1.

## IMPROVEMENT FOR ANGUSSANDERSON

Modifications Will Add to the Pleasure of Owners and Drivers of this Car

By An English


The Angus-Sanderson 1£ h.p. shomian! diss wherl equip). ment; stecl artillery wheels ci.' ulso stumlard


THE $1 \pm$ H. P. AN(iCS-S.NDERSON is the product of a combination of Jritish skill and production in the avtomotive field coming as it does as a resalt of the joint efforts of Sir William Angus-Sanderson and Company, T.td., of Newẹastle-on-Tyne; J. Tylor and Sons, Ltd., Oakleign Rood, New Southgate, Londen, N. 11 ; and E. G. Wigley and Company. Ltł., Soho, Birmingham. The engine is given over to Tylor and Sons, the gear boxes and transmissione to Wrigley and Company, and the erection and body construction to the Angus-Sanderson Company.

This scheme of production being new to the English market, attracted at once a great deal of attention, and is one attended by some difficulty, in that it needs a very strong head if three firms of the type and size mentioned are to run as one great concern, with but a single idea as to the car to be built.

Since that time Angus-Sandersons in increased quantities have appeared upon the road; but, naturally, pogress hats not lieem smooth, because in the first instance the designing staff, being human and fallible, could not settle wi priper eroly component of the car so that no further modification of the oar might be needed.

The car hat now passed the experimental stage
altogether, and illustrations are given herewith of the standard chassis and component parts, containing the whole of the modifications which have been evolved during the past year. It must be remembered that these modifications, although apparently slight, make a great difference, not only to the owner, but also to the works manufacturing the car, since in many instances, one cannot change even the 1 owition of a hole throngh which one single bolt may pass without this alteration entailing very considerable modifications to a number of jigs, and, in some cases, to many tools; the result of this alteration being temporarily to hold up production entirely until the jigs have been altered or sometimes renewed. Any owner, therefore, who clamors for the adjustment or redesigning of some little part of his car, should remember that modifications even to the very smallest part may entirely hold up the output of cars.

Turning now to the mechanical details of the latest type of chassis, the chief alteration concerns the engine, in that an entirely new cylinder head is used and one with water passages of greater size than those used for the criginal machines. Further to this, the outlet and inlet pipes from the radiator have been increased very greatly


The return pipe from radiator to cylinder jacket is in a new position and an inspection plate is in the

Four instead of
tho bolts cilds
stubility to the
starting motor

in size, and altered as to position, that on the top of the head being now an entirely separate pipe held to the casting by a single bolt, while the return pipe from the radiator is secured to the water jacket in a different position, and passes round the magneto base, curling inwards to the lower tank of the radiator.


The change in the last pipe has had to be undertaken with some care, and the pipe flattened in one position to clear the magneto platform effectively.

The radiator itself is of entirely different design; although of the familiar Angus-Sanderson shape, the tubes are no longer finned, but are crinkled, a series of thin vertical pipes zigzagging from the top tank to the lower one.

On the right-band side of the water jackets there is now a large aluminium inspection plate, bolted to the cylinder jacket walls, and used to enable the inspection deLartments to see the major portion of the inside of the water jacket when the casting is first delivered. It is also convenient for cleaning out the juckets when occasion arises. Originally, the Lucas starting motor on the right-


Modifications have becn made in the universal joint and
clutch stop
hand side of the crank case was held to the cylinder Whock ly a single aluminium clamp. It is now secunct by a much more substantial casting, shown in the sketh fublished herewith, and the four bolts make a much stronger job of the bracket. The alteration to this starter hats ontailed cationg away a portion of the edge of the water jatcket cover plate.
(Contsmued on Page 10t)


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Milburn Gaining Popularity
(Contimued from page 91)
the patchet on the left pedal is camied cut by a depression of the right one, an arrangement which works very well in practice. Both brakes take effect on the rear wheel drums.

Tiwo foont
brakes amd a heel reverse
pedal are on
the floor. Two
tillers control
steering and
power


In addition, should the çurrent be switched on when the brake is in action, the horn blows insistently. Normally, this is controlled by a small button in the end of the steering column, another evidence of neatness in detail design.

The third pedal, operated by the heel, is for reversing. When this is depressed and the control lever is moved forward, the car runs backwards. An electric brake is also fitted, actvated by pulling the control tiller towards the driver.

Thus it will be seen that the driving of the Milburn is extraordinarily simple. In front of the driver are placed two instruments-a Volt Ammeter, which indicates the amount of charge remaining in the batteries, and an ordinary front-wheel-driven speedometer. Two fingers on the Volt Ammeter, one black and one red, show the driver of the car how much further he can travel without recharging, in the same way that a gauge on a gasoline tank indicates the amount of fuel remaining therein.

To charge the batteries fully takes aproximately 20 kilowatts of elenticity. The onerating cost in China according to engineering estimates from the vehicle department of Andersen, Meyer and Co., China agents, is three cents Mexican a mile. It must be remembered that there is no expensive lubricating oil to be bought, and tire wear is considerably less than with a petrol-driven car of similar carrying capacity.

Recharging the batteries is a simple matter, and can rell be camied out by one who passesses no mechanical I nowledge whatever once a charging board has been installed. No chauffeur or trained mechanician is required. The car is full of detail refinement which must appeal strongly, while excellence of its suspension, its ease and great economy of operation are undoubtedly attractive.

HERE'S A MOTOR TRUCK STREET CAR


The New O 7 ans and Lower Coast Railroad, near New Orleans, U. S: A., has converted a 3-ton four wh el crive truck into a passenger car on its line to replace an entire passeriger train of a locomotive and five cars on a fifty mile run

## GAS IN U. S. IS AGAIN NORMAL

Shortage of Supply Over, National Motor Chamber Declares

The gasoline suppiy throughont the U. S. now is normal, according to reports from the directors of the National Automobile Chamber of Commerce. This is true even on the Pacific Coast where there was a serious shortage for 60 days. While the supplies are adequato to meet the needs, the prices are higher, and in many sections are tending higher than they have been. In some instances the higher cost is attributed to increased freight rates.

## GAS PRICES IN NEW ZEALAND.

The following prices were current October 1, having been fixed by the New Zealithd Govechment, for both Shell and Plume spirit, but there were practically no stocks available :-..

Shell or Plume.- Wholesale, per case, $30 / 6$; retail, per case, $32 / 6$.
The following are the current paices for gasoline, the prices of which have not been, so far, fixed by the Gevernment: :-

Tydol Brand.-Wholesale, per case, 35/- ; retail, per caso, 37/6.
One dealer states that he limded gasoline during August, in follows, yiz: -

1010 cures at $28 /-; 90$ casers at $30 / 6 ; 100$ censer at $31 /-$ -
To costs of landing are c.i.f. and e., plus 1 pereent primage tax.

## FRENCH PROTEST GRAND PRIX RULE.

French manufacturers are protesting agwinst the clanse in tho (irand Prix race rules which would ohlige then to sulbmit to a preliminary engine test moder which it wombly be necensary to produce 90 h.p. at 3000 r.p.m. The want a setraight rule calling for engines of $1 \times 53$ cul, in. pistom dixplacement.

## FOR SAFETY SAKE

outfit your car with

## TECON Motor LAMPS

## A brilliant, reliable


light the running cost of which is half that of any other

## lamp.

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# SEE PAGE 112 Buyers' Reference Guide 

## WINDSOR GLLASES

The Vogue in Eyewear
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## Improvement for Angus-Sanderson

(Continued from Page 101)
On the opposite side of the engine the dynamo is now held by a bracket of an entirely different type, fixed by form holte to the cast iron walls of the crank case, in such a picsition that the dynamo itself is considerably lower in the frame than it was before. The alteration has not made the dynamo any more accessible.

Betwern engine and clutchshaft-it will be remembered that the lower part of the crank case and lower part of the gear box form one casting, holding the gear box and engine together as a unit-there is now a flexible joint of large diamicter formed by two leather discs held between bronze brackets, and a part of the endwise movement of the clutch is taken on this joint, but the spines on the end of the gear box driving shaft are retained. The alteration to the universal joint has entailed redesigning of the clutchshaft.

In corder to increase the leg room in the driving compartment, the position of the clutch and brake pedals has been altered, the pedals themselves being lengthened to increase the effective leverage, but the pedal plates set firther forward. For the same reason the steering column of the car has less rake, but it is still held to the crank case by a single large flange combined with a bracket passing from the top of the steering gear box to the sider of the upper prortion of the crank case.

It will be remembered that the Angus-Sanderson had a particularly ingenious brake gear, for which the balancing beams were right aft above the bevel pinion casing, and


A rear view of the chassis showing balansed beam brake comyens rting gear mounted just in front of bevel finion case
the joint jaws were each arranged with small coil spring to prevent rattle. This part of the car has undergone little modification, but as regards the axle casing itself the introduction of new and more effective oil retaining washers has led to the use of grease cups, both for the brake arm bushes and the main axle bearings at the wheel end. Wedges are now fitted between the front axle and the springs

It will be seen that no one of these modifications effects a complete component, but that practically all of


## KEEP TRUCK PARTS CLEAN

Maximum Efficiency Demands Careful Consideration of Mechanism

Tho experienced truck owner insists that the exterior parts of his vehicles shadl be lient just as clean ast this interior of the cylinders. To begin with a clean engine cools bettor than a dirty one. Dirt and mud act as insulators, prevonting the metal from throwing off its suphes he: into the air. In other parts of the mechanism there are other reasons for cleanliness. Mud, which collects on brake-rot clevices and such parts, soaks up the oil intended to lubricate. the joints. The result is that the parts become dry and wear rapidly. All these chassis parts, rear axle, brake mechanism, ete, should bo cleanced at freguon requl: intervals and fresh oil should be given them. Dust ans dirt when mixed with oil make a sort of grinding comporund, which wears down bearings. Many truck ownors fit leather covers over stecring joints, brako conncetions, etc., which not only keep the lubricant in but prevent dist or water from getting at the part.
 Povements call an wedtent car.

 sent the line in China.

THE PART OF THE "CHAFING STRIP"
Provides Against Abrasive Action of Steel Rims Against Rubber

To provide ageinst the abmaive action of stew rims against the robber of a tire, manufacturers have provided an eapectally constricted material called bend bathic. Whem applicd io the tire the locald fathore io calted at chatimes stip.
 extend a short distance up undernemth the rubser sike-latlo. They protect the pat of the tire that fombere the ased of


 liayors of sond






## NEW "WRINKLES" IN AUTOMOTIVE ACCESSORIES



The leyt t) righle Finel ammersion set slourll below is the prodect of an linglish inventor. The cluims for it su!!! that it is ressil!! installerl. does not disturb the inspection plate of the gear case, is readily affixed by four bolts and does not project above the floor boards


Kozy-U'ings is the appropriate trade neme for the side shields here illustrated to
shelter the occupunts of a cur from drafts and dirt. It is claimed that they will not break either from vibration or strain


A nezo magneto replacement outfit is being placed on the market by the Westinglouse Electric and Mfg. Co., as a battery ignition substitute. The replacement process consists of unscrerving the magneto from its support, placing the outfit in position, res:tting the screws and coupling, making connections and timing

## +4.

The Apax spark plug cleaner is another Brown Bros. Ltd., product. It takes the form of an aluminun tube containing a quantity of hardened stecl wires. Clean. sing is done by filling the tube half full of gasoline, screwing the plug in the top and.shaking vigorously

The new Garl signal below is spotlight, portable trouble lamp and an illuminated front and and rear signal light all in one. Its unique feature is the signal hand


CZECHO-SLOVAKIA PRODUCED THIS MODEL


Count Sawha Kolowrat, once well hirom to many British motor cyclists, is the designer of this car. The engine is a "flat twin"

## WOMEN DRIVERS IN CALIFORNIA.

Studying registrations, the Howard Automol:ile Co., Buick distributors, San Francisco, find there are 70, How women motorists in Califomia-more; it j; said, than in any other state ; and 85 percent of them city women, Nail Francisco and Iros Angeles, together, having 25,000.

## REBUILDING BETGIAN ROADS

In its reconstruction program, Belgion is prepring extensive road improvements, the announcement coming from the Minister of Public Works that it is intended to make the now Belgian roads the finest, if possible, in the world. The presen't program includes the remaking of a network of roads which will connect Brussels with all important towns.

## WILLYS-OVERLAND RESUMES.

The Willys-Overland plant, at Toledo, resumed work on October 4 with 6,000 employees, including the 4,500 who were laid off the week before. The company has mot detemined as yot whether to operate on a hasis oif theoe days or six days a week. Comsidembly inmeated sales have shown since the recent price cuts.

## GAS COMPETITION IN FRANCE.

Active ermpetition in France has been lawin hewern American and English gasoline interests. The Standayl (bil ('o. will reek a kower retail price be instathag mome mesterm mothods of distribution. It is prepmed to an ant balk stomag tanks on tho premises of all dealers at admal


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## PACIFIC MOTOR SUPPLY

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## BUYERS＇REFERENCE GUIDE－PAGE 112

## THE SUNDAY ORGAN

FUR
ENGLISH－SPEAKING PEOPLE IN SHANGHAI IS
＂LLOYD＇S WEEKLY：＂
ONLY SIX DOLLARS A YEAR．

Connaught Motorcycle to Sell With Side－Car for $£ 100$

W＇l＇f heatior laxation imminent and the prive of ｜mel stsadily increasing in（ireat Britain there Joas alleth an modoulted demand for an inexpen－ sil：motor－p：peded vehicle which will conver two persons， cha：l！and comfortah！y，at a respectahle average preed over any oddan！road．In order to cater for the particular chate of pontial buyer to which at mathine of this doscrip）－ tion appeals，the Bordesley Engineering Co．，Ltd．，New Street，Birmingham，are marketing a $2 \frac{3}{4}$ h．p．two－speed side－car cutfit to retail at the notably－in these days－low wice of $\mathfrak{t}^{1} 100$ ．


The new low priced British combination
The whole machine presents an attractive and work－ manlike appearance，the specification including the well－ proved Connaught two－stroke engine（ 73 by 70 mm ．bore and stroke equal 293 c．e．），Sturmey－Archer two－speed countershaft gear－box（ratios 5 堮 and $10{ }_{2}^{1}$ to 1 ），with handle－ bar controlled clutch and kick－starter；while the side－car body is of the coach－built variety mounted on a well－designed classis of ample strength．Worthy of note is the fact that the motor－cecle frame is built up with $1 \frac{1}{8} \mathrm{in}$ ．dimeter tub－ ing，this size being standard on many machines of over double the engine capacity，so that there should be no fear of frame distortion or breakage owing to undue lightness of construction．The majority of the riders of high－powered motor－cycles have little or no idea of the power developed by the miniature two－stroke cngine，and to such as can be induce to lestuide a machine fitted with an engine of this deswition＂onething in the nature of an＂eye－opener＂is promised．On a recent test trip an average speed of 19－20 miles per hour was easily maintained，with full load，over give－and－take toads，and this without＂forcing＂the engine in any way．Seventy－five miles in all was covered with a consumption of slightly over three－quarters of a gallon of ＇petroil＂mixture，this consumption，however，being capable of improvement owing to the frequent stops necessitated

# FROM TWO TO THIRTY THOUSAND 

Harley-Davidson Motor Plant Employs 2.400 Men in Production of Cycles

In 1904 the Harley-Daridson Motor Company made their debut on the American market with an annual production of two motorcycles. It isn't recorded just who the cycles were sold to but probably they were not sold at all and Mr. Harley, if there is a Mr. Harley, and Mr. Davidson rode them themselves. Since that time the production of the plant has grown with the increasing demand until for 1920 the production has reached 30,000 .

The detailed statement of years and production follows:
1904 - 2, 1905ॅ-8, 1906-50, 1907-150, 1908-450, 1909-1,149, 1910-3,168, 1911-5,625, 1912-9,571, 1913-12,958, 1914-16,230 1915-16,343, 1916-16,917, 1917-18,5222, 1918-18,613, 1919-22,685, 1920-27,074, 1921-30,000 (estimated). The average number of employees during the 1920 season was approximately 2,400 . The Harley-Davidson factories occupy 491,397 square feet.

## ARMED MOTOR POLICE FOR PARIS.

A permanent motor police force has been organized in P'aris as the only practical way of dealing with the increasing number of criminals who use motor rehicles when carring out their nefarioue exploits, chiefly in the shape of highway robberies. The police cars will be lightly armoured in vital parts, and the police will carry automatic pistols.
by business calls. As already indicated, lubrication of the engine is effected by the "petroil" system, which automatically supplies oil in proportion to the throttle opening, a feature which proved eminently satisfactory, no signs of "drying-lp" being apparent even after a gruelling climb on low gear. Owing probably to the well-designed combized inlet and exhaust manifold there was a commendable abeence of "four-stroking," the engine "two-stroking" peefectic at all speeds from dead slow to "all out.

A comparison between the present cost of traveling by bail and by the "low-powered" side-cat machine is hath intereting and informative-the most ecomomical means of tracel leing, of course, the latter, which moses two prople from starting point to actual destmation without a chatge of vehicle at a cost of, roughly, 3 d. jeer mile for frel, ete. It :homid also be remembered that when traveling hy rail the cost of getting from starting preint to tation and fram at: ites: 10 desetimetion must be added to the already high fare.



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To be applied to completing the purchase of a block of General Motors Corp. shares, the Explosives Trades, Ltd., London, England, $88,000,000$ seven-year secured notes at $96 \frac{1}{2}$, repayable at par. The company's name will be changed to Nobel Industries; Ltd., because a great majority of its present interests are now peace productions.

## STANDARI TPUCK CUTS PRICFS

Effective Octoher 1, four models of the Standard Motor Truck Co., Detroit, were decreased. Model "1-K," 1-ton, is now $\$ 2,250$, reducedf rom $\$ 2,475$; the $2 \frac{1}{2}$-ton, formerly $\$ 3,520$, is now $\$ 3,100$; the $3 \frac{1}{2}$-tons which was $\$ 4,410$, is $\$ 4,000$; and the five ton, formerly retailed for $\$ 5,250$, now list, at $\$ 4,800$.


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The ability of Gargoyle Mobiloil " E " to reach all moving parts is due to its scientifically correct body. Its ability to absorb and radiate heat and give full pro-


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# MOTOR 

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## MERCER SPORTING MODEL



## SPECIFICATIONS

Mercer Sporting Model

Cylinders-Cast on bloc, $3 \frac{3}{4}$-inch bore, $6 \frac{3}{4}$-inch stroke, valves all on right side.

Horse-Power-22 S. A. E. rating. Block test above 70 H.-P.

Ignition-Independent single spark high tension magueto.

Springs-Semi-elliptic front $2 \frac{7}{2}$ inches wide, 39 inches long. Semi-elliptic rear $2 \frac{3}{4}$ inches wide. 59 inches long.

Clutch-Multiple disc dry plate.
Gear Set-Four-speed, sliding gear, selective type, direct drive on fourth.

Rear Axle-Shaft drive, full floating spiral bevel gear type.

Gasoline Tank Capacity-22 gallons, with arrangement for 2 gallons reserve.
TWheel Base-132 inches.
Tread-56 inches.
Wheels-Wire.
Tires-32 x $4 \frac{1}{2}$ Straight Side Cord
Electric Lighting and Starting System-6-volt Westinghouse 2-unit system.
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Steering Wheel-18 inches.
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Length of Car Over All, Top Up--16 feet 1 inch.
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## THE CENTRAL GARAGE COMPANY

## THE ORIENTAL MOTOR

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## A Monthly Magazine dewoted to Motor Interests in China and the Far East generally MOTORING - MOTOR CYCLING - AVIATION


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## AN AUTOMOBILE SHOW IN SHANGHAI THIS AUTUMN-WHY NOT?


#### Abstract

Shanghai, being the automobile center of the Far East, should have an automobile show. And Shanghai can have such a show if the dealers, distributors and other interested parties will work collectively and intelligently toward that achievement.


An automobile show would be a wonderful thing for the automobile men of Shanghai. It would be the best kind of advertising for the dealers here and the manufacturers at home. It would have a tremendous educational value for foreign and native buyers, particularly the latter. And it would be a boost for more and better roads.

For the benefit of those who are identified with and interested in the development of the automotive industry in Shanghai and the Far East, THE ORIENTAL MOTOR presents herewith a summary of the principal advantages that would accrue from such a show :
(1) It would stamp the automobile dealers here as the most progressive business men in the Far East.
(2) It would be highly educational, with resultant decrease in sales resistance.
(3) It would have a solidifying effect on the trade, which would mean united effort toward road improvements, better shipping facilities and rates, legislation here and at home, etc., etc.
(4) It would spur manufacturers to a keener appreciation of this market.
(5) It would give a tremendous impetus to the good roads movement in China.
(6) It would be tremendously impressive to native buyers because of its direct, visional appeal.
(7) It would prompt manufacturers of other foreign products to make similar displays, which would increase the value of this market for their goods, which in turn would help the automotive industry*
(8) It would lead to the sale of cars, especially closed models.
(9) It would prompt the newspapers to get ont special "anto show numbers." which would whill in world wide publicity for Far Eastern automotive developments.
(10) It would prompt manufacturers to send factory representatives here, which would be a good thing for the trade generally.
(11) It could be arranged at small cost to the individual dealer, with all the probnbilities favoring an actual profit over expenses from whmission resente.
(12) It would be a tremendous boost for shamymai.
(13) It woukd be a concrete method of taking ads:atage of the present desire amb determinntion of mama faceturers to cultivate the foreigh markel intensively.
 Eastern market would become more important, and correspondingly more protituble.

THINK IT OVER, GENTLEAKN OF THF TRADE:


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## THE

## ORIENTAL MOTOR

## A Monthly Magazine devoted to Motor Interests in China and the Far East Generally

## CHINA'S ROADS ARE COMING

## Development in all Parts of the Nation Indicate Large Future Expansion in Highways




WHEN THE COUN'TRIES of the Western world were unpierced forests and desert wastes, China was building one of the world's most stupendous engineer feats, The Great Wall, and an imperial highway system connected the various important parts of the country. Years passed and with the decadence of the dynasties, China's roads were obliterated, communication between the various parts of the country made impossible, and the great chain of highways became a memory.

Western countries feeling the impetus of militury and other necessity, beginning with the Roman emperors, began the construction of highways, the movement spreading with the improvement of transportation mothods. Now thot the motor car, as both a freight and passenger samsing vehicle, has become an overy day necessit! in the fommene: of the Occident, the national chains of romdway hate mede their impression upon tho Oriental and barticularly Hw Chinese. The road movement has come back, perhappa fo it original homo, and China is begiming to go dmomphly into tho mattor of highways.

But this is just the beginning, the mads that are being luilt are of short length, commected one or two districto. or two or three cities. The ravages of the famine in the North have given rise to a mumber of wad projects for the utilization of famine stricken labor in an effort to take the humiliation of pure charity away trom the gining of ford :ma clothing to the unfortunate comiry people and their fimilics.

In the powime of thantung the Imeriean had (roms is expending one-half million dollats gold. a fund contributed from the I'nited states, in the combtrmben of a highaty
 distance of sixte-serom miles. 'This hemg timshed the wolk will be pushed intil the fanime sulforeso of the datrict :ate
 thath several humdreds. of mites will wemmatl! l:o lath in pas

 and will lom the hasis for a latere symom ats wald as an angimering model to follow.

Similar rad projects of fifty to one handred mitere in length abound over the entire fimine district, litying the foundation for the linking up of them all in the provinces of Chibli, Shantung, Anhwei, Shansi, and the other affe:twl areas into a complete system. The govermont in taking part in the road construction and its participation may bring road building into a greater prominence in its future programs.


Along the Rubicon Road. Sianghai
The roads already built have been the subject of discussion in past issues of THE ORIENTAL MOTOR and are not necessary in describing the new movement.

By a happy and fortunate coincidence for the nation of China as a whole, and all concerned, the majority of the road building projects, which have all come to light within the past four or five months, are originating with the business men and the gentry of the country. All plans, almost without exception, include as a part of the plan the operation of a motor freight and passenger service over the route. So with China as with the other countries of the world the road development and that of the automotive industry of the nation are from the beginning to be interlocked, each giving an impetus to the other.

The Chinese native language press carries almost daily news of frojected road plans. Many oi them, perhaps, are visionary and will take years for their realization but they are all encouraging to the Chinese and foreigner alike because of the concrete indication that the necessity of road construction is occupring the minds of natives who are without the sphere of foreign influence. Ther presage what the development of the next ten or twenty years will be.

A motor road has been in the process of building from Chefoo, a northern port, to Weihsien since November 1 of last year and by the middle of the month of December 140 li, Chinese miles, or one-third of a Western mile, had been constructed. The road will be divided into two sections, one from Chefoo to Lungko and the second fiom Lungko to Weihsien, the entire distance being. 480 li . According to recent reports motor trucks have been ordered for freight
and passenger service aut witl he placel in operation on the highway as soon as it is completed. Future developments are expected to extend this road to Tsinanfu, the capital of of the province of Shantung.

In Kansu province native merchants and gentry havebanded themselves together to build a motor road from Lanchow, the capital, to Pingliang and Sian, for the operation of a passenger and freight service.

In Ningpo, Wang Chen-ting, a merchant, has associated himself with a number of business men of the city for the construction of a highway from that port to Fenghsien, a distance of eighty li. A motor service is included in the plans of this company.

The rrovincial assembly of Chekiang has passed a measure authorizing the raising of funds for the construction of highway and a special burean has been established at the capital. The first project planned is that of an interprovincial roadway from Siaoshan, Chekiang, to Futing, in the province of Fukien, four engineers are now at work on thesurvering of the route and work will be begun as soon as they laxe made their report.

Hangchow, one of the beauty spots of China, is also the objective of a road development plan!. The Pan-Pacific Association of Shanghai, throngh its road committee, headed. by Dr. C. T. Wang, is completing plans for the connecting of the two cities by a motor highway, which will be conducted along the toll plan. An active campaign, it is said, will be begun at once for the raising of the necessary funds. for this project and engineers will begin work to ascertain the most advantageous route. The Association, which is a joint Chinese-foreign body, is said to be contemplating the holding of a good road's show in Shanghai during May of this year.


Canton's City Wall makes way for a road
Further developments in the Shanghai district are indicated in the recent announcement that a Chinese firm had been organized to build and operate a private motor road between Shanghai and Minghong. The road, as planned, will start at the Shanghai South Station, and take a course
to Minghong by way of Jungwha, Chuchaihing, Unpanchiao, Chuanchiao and Peichiao. The gentry of Fenghsien, Nanwei and Sunkiang have also signified their interest in the project and branch roads may be constructed.

There is a little group which has been working quietly, perfecting its plans and, so successful has it been, that it is highly likely within the year Shanghai motorists will have another new road and a new territory to run through, with every possibility of extension. This new road is to be to T'aitsang, a very important place some 25 miles to the north-west of Shanglai, and a little north-east of the perhaps better known town of Kunshan.

What is still more interesting is that Taitsang is about halfway to Soochow, though a little to the north of the direct line, so, even if the other plan for the road to the hills remains held up, here at last will be a good start on the way to Soochow, for, once a road is laid down so far and its benefits are appreciated, it is highly probable that an extension could be arranged with very little difficulty. It is a country abounding in creeks and small lakes and, when better known, will be found to be a fine sparting district.

The scheme owes its inception to the community of Taitsang men in Shanghai, beaded by Mr. Hsi Hung-pai. These gentlemen were vastly impressed with the success of the motorcar service organised at Nantungchow and determined to secure as good and better for their native place. So they planned a road with the terminus this end in Chapei, the course to follow an existing track, which has only to be widened and metalled.


Owe of the modern streets of Pelieng
It is figured that $\$ 300.000$ will berepuired and a combpany is to loe formed with this amome its the subserihed capital and that it will be seened withow tombla is men doubted, for the promoters have received very substantarl assuramees of s:्川pport atrealy. They hate at orgmization bureat in the feftement and ate geng ahead with dheir arrangemente withont any lose of lime.

Should things turn out as is hoped, the work of construction will be commenced in the Spring and orders for cars will also be placed then, so that the service can be started as soon as the road is ready.

In connection with this road, it should not be overlooked that, from T'aitsang, it would not be a tremendous proposition to run a road across to Woosung, where it would link with the road running along the Whangpoo to Shanghai. If Wocsung is going to be all that is promised by the pro-


On the way to Woosung
moters of the big development scheme, here is a fine chance to start right in and build simultaneously with the Taitsang people, so that a fine circular route could be constructed.

And these are cnly a few of the road building plans that nave come to light. Like the Taitsang project, there may be many others under cover. This recounting does not include the roads already in use around Peking, the PekingTientsin highway, the develcpment at Nantungchow, and Fcochow, the Canton project, the Shanghai-Thoosung highway, nor, as before mentioned, the many :matler famine wherf werks.
'there is value in atl these plans, and perthe dreams, and they should comvinee wen the mest skeptical that China and the chinese realize their med of row and and doing their beat to stant a mowement that will kad wa national highway system.

Despite the many whe ate diswrmeted ame denthe (binal has been making hate attemplo whthen the past fow




 momications and for hetter commeremal mblets. 'The de-






# OLYMPIC SHOWED NO RADICAL DEPARTURES 

Exhibition with the Augmented White City Display A Satisfying Success to British Motordom

0LixlPIA, the crowning motor show of the British Fmpire, is over and the exhibitors and patrons are unammens in their acelamations: of the surcess of thite exhibition. Augmented this year by the use of the White City, the show was London's largest, as was the attendance. A greater number of cars from all of the principal producing countries participated, particularly those of the United States. The tires and accessories end of the exhibit rank high and brought the approval of all concemed.

There were no radical departures in the London show British design has not developed materially during the period of recovering from the war and there has been no general effort tu decign for :heaper production. The


Armstron!g-Siddeleg. E-c!glimeler Tonrin!g
majority of the potential buyers were interested in small cars. endeavoring to economize in view of increased fuet costs and taxes. Expected reductions were visibly having their effect on buying despite the announcements by the makers that the cost of production will have to be reduced before any decrease can be riade.

The magneto still has the call over battery ignition in British made motors by a wide margin. Eighty percent of the cars have belt driven generators. Clincher tires were still in the majority, and the new of metal wheels of both the wire and the disk variety was shown to be becoming increasingly popular. The use of aluminum is also becoming more general.

There hat leen no marked extemsion of the nae of orerhead valves, Unit power plants are in the minority although there wene evidencos of a trend loward this tye of con-truction. 'The practice of fitting both brakes to the real wheel has incressed renarkably but usually both eots are in contrast to American practice. The average British car, as showni, has the following characteristics: L-head engine, cone clutch, gearest located amidships, cast iron pistons, hollow shaft lubrication magneto ignition and spirial bevel drive.
'l'here were few new models exhibited, and perhaps the most interesting was the Leyland. It has a block cast (.icht-c!umder-in-line engine with overherù camshaft. Deleo ignition is used, and the tranemission comprises a separate geasset and a double bevel drive. The car is priced at £2,100.

The: following is a more complete description of a fuel oif the pricncipal British makes at the show :

Four of the Arrol-Johnston cars, or A.J's. as they are affectionately known by satisfied owners, were shown, two being forir-pasenger towing cars and two with fourinterior drive all-weather bodies, a type of A.J which, although not imnuediately new, has not yet appeared in satisfring quantities.

IIthough at first glance similar to the past season's mode!, the new A.J. chassis has been improved in one or two respects, the most notable change bieing in the rear spanging, which now three-quarter elliptic underslung instead of full eliptic. The rear axle has been strengthened, and special provision is made for the speedometer drive immediately at the rear of he gearbox, whilst variable ignition with a control on the steering wheel is now fitted. The essentiais of the design remain unchanges.

In the Austin Seventy slight alterations in the lay-out have been made, the electric starter now being situated at the side of the gearbox, and two belts are now employed to drive the fan and dynamo respectively, instead of the three-point drive system heretofore. Both these are adjustable. The drive to the magneto has allso been simplified, and more accurate timing can now be obtained by means of venier adjustment. Cast in onle piece, the crankease is now


The 19:1 Rolls-Hoyce
more rigid than before, and the oil filler is mounted on the off-side with a dipper rod to supersede the glass oil gauge. The lubricating system has been slightly improved, oil now drainixg into a false bottom in the crankcase, and passing thence into the sump, this filter being detachable without moving the crankcase.

The Rolls-Royce cars shown were models which, in the ordinary course of events, would by this timac have been in the hands of their purchasers. Owing
to the coachbuilders' strike, the actual Show models were delayed, and these three other cars were exhibited instead. Most striking was the open four-passenger touring model, painted a pleasing shade of yellow, the coachwork being by Hcoper. The chassis is the standard 1920 production. The only features whereby these cars differ from their predecessors at Olympia is in the fitting of a priming device on the induction pipe, to provide easy starting, and a non-trembler coil is also now standard. The six-cylindered engine, with a.bore and stroke of 114 mm . by 121 mm . has. a Treasury rating of $48.6 \mathrm{~h} . \mathrm{p}$. The silent starter-mator, which drives through the gearbox, is a feature of RollsRoyce cars, as is the cantilever suspension system.

Without doubt the new eight-cylindered Leyland was the most interesting car at the Show this year. Its design is Flainly unorthodox, and it strikes an entirely new note in construction. In general appearance the car is arresting b.y its hugeness and its sturdy, almost rugged, lines. The radiator is square when viewed from the front, and the three-piece hood-with a multiplicity of louvres cut in its sides-carries the square lines back to the dash and coachwork. The bold effect is accentuated somewhat by the


The C'alloway ' Compe
fitting of a disapreang hood. Even the lamps conform with the angularity of the rest of the car, having fom tapering flat sides instead of being round, as is customary, and the whole car is particularly big and massive.

The cight eylinders of the engine are cast in line in a single block. Overhead valves are employed, the overhead camshalt being driven by three eccentrics set at 120 degrees, which is at ance an mique and well-nigh perfect erstem. The bore and stroke of 89 mm . by 140 mm . gives a cubic capacity of nearly 7 litres. Remarkable powes is developed and the car has a speed of sis m.p.h. on satable ronds. Alaminimm pistons are wed, as are tubular comereting rods, lubrication being ioneed to the ginderon p:1n-

The rear springing is of great interents: the equivatent of quarter-elliptic leaf eprings are fitted, anchored at their forwand ends in at housing to which in turn is attached a nickel-etrome steel rod, which mons half-way actosis the chasesis, and aromed it is a tuhe which, at ifs immer end is fised to the rod and at its outer and to the chassis site member. Thens, when in kaid is put on the spring beoth the rod and tube twist slightly, owing to the torsion. I thl
is fitted aboye the spring, so that any extra load makes the spring itself flex. A vacuum-operated foot brake is employed, pressure on the pedal opening a valve connecting the induction ripe to a chamber in which is a plunger attached to the brake-operating mechanism. Thus, extreme lightnoss of oparation is obtained. The steering gear, too, is unorthodox.


Special Daimler "f.j" Chassis
Sunbeam fars hold a position in the automotile industry which may be designated as enviable, and four examples of these popular cars wore exhibited. Two if these cilihit: are contlete cars of the $16 \mathrm{~h} . \mathrm{p}$. model, and at the cotat two, cne a a 24 h.p. chassis and the other a 24 hathon.
low all intents and punpose it can i.e eaid that hoth 16 h.p. and 24 h.p. models aro ats supplied dming the past veberen, since what alterations theme are contineat to purely detail improvements.

The 16 h.p. chassis compares af forevinter sill mm. by 150 mm . engine, with side-by-side valves, force-feed lubgiation, and (andel-Holwon enburedor, and the fimiliar fatten of Sumberm geablex and tratimision. In Wee 1921 motels the porition of the starting m:ton has been altered from the neare wide to the wfif side, where it is fitted on a bracket attached to the crankeate at the side of the stearirge columb instrad of being atached to the frame as lafore Aodeled ifen res smilar lines to the 16 h.j. Wpe the $2 t$










## LAST WORD IN MOTOR LUXURY



It was with wonder and amazement that we viewed, a few days ago, what might be described, without fear of contradiction, as: the most luxurious and completely equipped car in the world. Painted in maure and lined with a broad gold stripe, this magnificent specimen of the car designers' and the coachbuilders' craftemanship simply held one enthralled at a glance. Splendid in its symmetry and its size from an external view, a peep at the interior promptly impressed on one's mind that here was luxury unsurpassed, and something not before seen mounted on a fast-moving road vehicle. It at once conjured up visions of the splendor of the East; in particular, of our Indian Empire. This surmise proved to be correct, for this beautiful vehicle was designed specially to the order of H.H. the Maharajah Sahib of Bharatpur, Rajputana, India. We have all read, and some of us have seen, the unsurpassed wealth and regality of the Delhi Durbar, and here it seemed was a motorcar destined even to eclipse some of the wonderful and weird equipages to be seen even in that gorgeous precession.

The workmanship and finish of the $45 \mathrm{~h} . \mathrm{p}$. six-cylinder British chassis, although beautiful in the extreme, simply paled into insignificance with the interior, which is entirely finished in solid mahogany and satin veneer, inlaid with mother of pearl.

At the back of the front seats is a cabinet over which is a table. Two small folding doors in this fitting give access to a large solid silver cigar licx, while a drawer at the bottom, lined with plush, contains glasses. In the center of these two receptacles are mounted speedometer and clock. On either side of this cabinet are auxiliary folding seats, which, when not in use, fold completely out of sight, and appear simply as panels veneered with mahogany and satin wood, inlaid with various linings and mother of pearl.

At each side of the back settee is a cabinet similarly finished to the other woodwork. The one on the right contains two large-sized Thermos flasks, and the other on the left is replete with various cut-glass and silver-mounted toilet bottles, a manicure set, and brush and comb. All the silver mountings and fittings are engraved with the
owner's crest. On the doors of each of these cabinets is a Dictograph mouthpiece of special pattern, also moulded in solid silver, crests being inscribed in the center. The pushes: for calling attention to the driver, are of solid gold and silver, and are fitted into the capping around the windows. Both the Dictograph moutbpieces communicate with a loudspeaking trumpet fitted just above the driver's head.

The back settee has arm rests at each side, and is upholstered in mauve silk, shot with a special silver design similar to the auxiliary seats. In addition, two cushions to match are provided.

The windows are adorned with roller type blinds and curtains suspended from a rail, the latter being so designed as to enable the occupants to see out during the daytime without being seen. All the windows are also provided with special raising and lowering appliances, which enable them to be opened to any position desired.

Ventilation and cooling are provided by an electric fan mounted high up over the dividing windows, and by two

large glass ventilators situated in the roof, which open outwards. One of these is fitted in the back portion so as to allow a free current of air along the roof. The heating: of the interior has not been forgotten, this being provided by a smail electric radiator.

The floor is covered with carpet suitable in quality with the remainder of the luxurious appointments.


In the center of the roof is a large electric light, similar lights also being placed in each corner above the back settee, while on either side of the auxiliary seats is a handsome fluted silver flower vase.

The driver's compartment is also elaborate in the extreme, and on the handsome mahogany facia board is a -speedometer, clock, electric cigar lighter, electric lighting and starting switchboard, and two dash lamps. On the steering wheel is a Eural horn operator, while just in front of the gear change is a small handle which operates the wire mechanism connected with a large electric searchlight mounted high on the off side of the radiator. By this handle the searchlight can be swivelled up, down and sideways.

Attached to the running board is a collapsible step, which is fitted with a fiber mat on one side and covered with aluminium on the other. In addition, to the soarchlight, there is a pair of head lamps ; the side lamps aro stremment out of the front fenders. Small lamps also provile lights to show up the running bourds at night. The windshichd is of the four piece V-type, while the hood runs gracelully into the darch.

The above dencription will give some ider of the wonder car and its splendor which will rival some of the halew of the Arabian Nights in carriages for potentates.

No less interesting, however, is is similare chatsisis fiftorl to a five passenger sport body for the sitme onver. Its
painting is in canary yellow with light blue facings ant lininge. The aluminiom bedy is stremblined and mergen neatly into the dasin, the lines sloping from the tear forward

An unusual and unprecedented feature of the car is round bulbous tail, which has four compartments. (1) the feft the lifting of a flap reveals a water tank. Water is drawn from the tank by inserting as spectially designed tap. which also serves as a key. It the right is at refrigerator: while in a dratres that pulls out from the center is : wist bowl, towel rack, and suip box, all silver phated. 'Phu is is aho a special type of dickey seat, the supperting hess of wheh automatically disampear into the bedy when mot in low.

I'wo mahogany cabinets hate been fithat into the
 front seats have collapsible backs. which can le uthliad for
 forward.








 Lundun.

## AIR RECORD IS BROKEN

American Aviator Lowers International Time Made by Lecointe

( 3 M゙ AN AMERICAN Cortrespondent)

FTOOM I SPECTACELADR vewpoine, the andievement of the Verville lackand in heaking thes world's aimlane record for speed over at closed macing circuit was the outstanding feature of the Pulitzer Trophy Race held under the auspices of the Aero Club of Ancric:a at Mitched Field, Iong Island, on last Thank:giving Day.

Piloted by Capt. C. C. Mosley of the Army Air Service, this winged monstor, equipped with its enomons Got horsepower Packard motor, negotiated the 132 -mile course in $44: 29: 57$, cight miles an hour farter thim the world's speed record hung up by Sadi Lecointe, the Frenchman, in his Nieuport Special during the Gordon Bennett aviation daces held in France last september. Formost of all in the race was the demonstration of aviation's eafety and certainty. Out of thirty-five machines that passed the first pylon all but eleven completed the three laps of the triangular course-Mitchel Field to Lufberry Field, near Wintagh, to Henry J. Danm Ficld, at Babylon, and return. It was a remarkible-performance, one that should inspire confidence, indicating that airplane manufacturers liave succeeded in designing and building notors that are reasonably reliable and dependable even under the stress and strain of race conditions. The race also undoultedly produced some performance and engineering data that will te useful in future desigh and construction.

It was a foregone conclusion that unless the same difficulty that caused its ignominious failure in the Gordon Bemett races, i.e., lack of sufficient radiation resulting in an over-heating of its motor, presented itself, the Verville Packard would outstrip the field. With its $600 \mathrm{~h} . \mathrm{p}$. motor, it was far more powerful than anything entered in the race. Furthermore, it was essentially a racing design while its competitors were all machines designed and built for service. Its only competitors with even the slightest dhance of wiming were the Thomas Norse with a $300 \mathrm{~h} . \mathrm{p}$. Wright (Hispano) motor, the Loening Special monoplane with a $300 \mathrm{~h} . \mathrm{p}$. Wright (Hispano) motor, and the CurtissKirkham triplanes with their $400 \mathrm{~h} . \mathrm{p}$. Kirkham motors.

Other American machines entered were the Vought V. 1:. 7 with the leU h.j. Wright (Hispano) motor, the Ordnamco Lingineering Countanys Orenco with the 300 h.p. Wright (Hirpazo) motor, and the De Haviland with the Liberty $400 \mathrm{~h} . \mathrm{p}$. motor.

Foreign representatives were the Britisin S. E. 5 with the lill h.j. Wright (Hi-pmol motor, and the Sopswith Dolphin with the 300 h.p. Wright (Hispano) motor, the Italim Ansaldo S. V. A. with the 200 h.p. SPA motor, and the French Norane Sauluier with the Le Khone 110
1.p. motor. A German Fokker with a 300 h.p. Packard motor was entered but came to grief en route and could not be made ready in time to enter.

Outside of the performance of the Verville Packard, which was expected, the performance of five machinesthe Thomas Morse, the Loening, the Vought, the Orenco and the Ansaldo S. V: A. furnished surprise and useful data.

Of these, from the standpoint of speed and consistency, the Themas Morse proved its claim as being one of the fastest service machines in the world today. Not only fast but, more important than either, consistent and reliable. Hore was a machine designed for 150 miles an hour, a mark which is bettered by $18 \frac{1}{2}$ miles an hour in the race. Two days later, in á speed trial over a measured course in order to leat the record of 192 miles an hour made by Capt. Bemard Romanet, the French pilot in a Spad, the Thomas Morse attained a speed of 171.25 miles an hour; whereas the Verville Packard bettered its average speed made on Thanksgiving Day by only eight miles an hour.

The Ansaldo S. V. A. was the only foreign representative to finish inside the first ten places and its performance in winning third place in a field of machines with double and treble its power speaks well for the efficiency of its design and motor. This machine-a stock machine which is now seeking a place in the commercial aviation worldcompleted the course in $51: 57: 62$, less than seven and onehalf minutes behind the Verville Packard and less than five minutes behind the Thomas Morse.

The Orenco, manufactured by the Ordnance Engineering Corporation and piloted by Capt. St. Clair Street, commander of the recent Alaskan expedition, fimshed in fourth place with an average speed of 151 miles per hour, furnishing another sumprise.

Fifth place was won by a Vought V. E. 7 and, considering the fact that it was designed essentially as a primary training plane and that it was equipped with a Wright motor of only $180 \mathrm{~h} . \mathrm{p}$., its performance in defeating the seventeen De Havilands is a considerable tribute to its designer. Its elapsed time was $55: 39: 19$, or an average speed of 143.3 miles per hour. The failure of either of the two Curtise-Kirkham triplanes was a considerable disappointment to navy representatives. One of them, the same machine in which Roland Rohlfs set a world's altitude record and a world's climbing record and credited with a speed of 165 miles per hour, was confidently expected to outstrip the field with the possible exception of the Verville. It negotiated two laps in fast time and then developed motor trouble; while the second machine, after considerable diffe
(Contsnued on Page 8a)

# AIR TRAVEL BETWEEN SHANGHAI AND PEKIN ${ }_{G}$ 

New Line to be Established by May First, According to Official Announcements



Setting up one of the Handley-Pages at Peking

SHANGHAI IS TO BE connected by airplane service with Peking, China's capital city, with a twelve hour travel time between the two points, according to recent official announcements. The inauguration of the line has received the sanction of the Cabinet and preparations are now under way for the location of hangars, aerodromes, passenger and mail stations along the route selected. The line will be one of the world's longest and will reduce the traveling time from Peking to the port city from more than two days to a few hours.

This first line, which is to be conducted by foreign pilots, there not being any native pilots who are sufficiently well trained to take up the work at the present time, is to be of an experimental nature and if it proves to be a success financially and otherwise, the Aeronatical Department of the government will establish other lines. Those contemFlated are lineis to Mukden and to points in Chihli province, necersitated by the fact that the nation's two war lords, Chang Tso-ling and Tsao Kun, are in possession of a certain number of the planes belonging to the government and will only consent to their use in these services.

The service may be inaugursted on May 1, according to Colonel F. V. Holt, British advisor to the Aeronatitical Department. The work of selecting sites for landing fields and other necessary ground works for tho establishment of the service is now being carried out.

The time table and rules governing the service as pumulgated tentatively by the Aeromatical Itpratment follow

Speed of Vimy Commarcial calentated at so mikes per hour. Times calculated for May 1 on which day dawns at Feking is at $5.10 \mathrm{a} . \mathrm{m}$., sunset at $6.53 \mathrm{p} . \mathrm{m}$. At Nhanghai dawn 5.16 a.m., sunset 6.38 p.m.

| Place | Miles | Peking Arr. | -Shanghai Dep. | Remarks | Shang Arr. | hai-Peking Dep. | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Peking |  |  | $5.30 \mathrm{a} . \mathrm{m}$. |  | 6 p.m. |  |  |
| Tientsin | 75 | 6.26 | $6.45 \mathrm{a} . \mathrm{m}$. |  | 4.21 | 5.00 p.m. |  |
| Tsinanfu | 170 | 8.51 | $10.00 \mathrm{a} . \mathrm{m}$. | Change airplane | 1.15 | 2.15 p.m. | Change airplane |
| Suchowfu | 180 | 12.15 | 12.45 p.m. |  | 10.30 | 11 a.m. |  |
| Nanking | 180 | 3 | 3.45 p.m. | Change airplane | 7.45 | 8.15 a.m. | Change airplane |
| Shanghai | 180 | 6 p.m |  |  | 5.30 a | a.m. |  |

The service from Peking to Shanghai will run on Sundays, Wednesdays and Fridays.

The service from Shanghai to Peking will run on Tuesdays, Thursdays and Saturdays.

Restamants and Waiting liooms will be provided upon all aerodromes.

The Development is, being assived in crer way hy the Minister of Commmisations and the birestore of the low Offere. The final detaits concerning chatges hatwe win det been wetted, but they will problably be:

 detivery and collection.
 mit is 50 grammes.

 (1)1 He aterodronse.







## SHANGHAI REGULATIONS PUBLISHED

## International Municipal Council Defines Traffic Rules and License Conditions

I wefmitioni of the rule which will goven the regula tion of trattice the the emational settlement of shamghai Was published ly the Thancipal comed of that city in the
 wised and hecame effective on Jammer 1 dif the geverning of motorists and others

As traffic regulation is a subject of great interest in Chimit is well in the other countries of the Far bast, 'Illd
 notitiontions fromulgated for the henefit of its readers

## MUNICIPAL NOTIFICATION

## No. 2785

## TR.IFFIC REGULATIONS.

The following Tegulations for the governance, control, direction and facilitation of traftic within the limits of the Foreign Settlement and on Municipal roads or alleyways outside such limits, have been authorized by the Council under the powers conferred by Bye-law XXXVI anmexed to the Land Regulations for the said Foreign Settlement. The said Regulations will have effect from January 1, 1921, on which date the existing Regulations will cease to be effective:-
1.-Certain Terms and Expressions used in these Regulations shall be defined as under:

Traffic.-Vehicles and pedestrians making use of a highway.
Highurenys. - Any space intended for vehicular or pedestrian traffic. Synonymous terms: Road street, Thoroughfare.
Roadway.-That portion of a highway intended for the use of vehicles.
Footpath.-That portion of a highway intended for the use of pedestrians.
Kerb ( ('url). -The edge of a roadway, whether marked or understood.
Safety Zonc.-Any portion of a roadway from which vehicles are excluded.
Street Island.-A raised portion of a roadway forming a safety zone. The term includes:-
(a) Traftic Island-a refuge for the use of pedestrians or a turning or division point for vehicular traffic.
(b) Tramway Island or Loading Platform-a refuge at a tramway stopping place for the use of passengers entering or leaving tran cars.
Vehicle.-Any conveyance (but not including a horse.) Provided (1) that skaters, children's perambulators and invalids' chairs shall be considered as vehicles only when on a roadway but as pedestrians when on a footpath; (2) that in these Regulations the term 'vehicle,' expressed or implied, shall apply to tramcars only in so far as their being confined to rails will allow.
Horse.-Any animal used as a conveyance or for draught purposes.
Driver.-Any person who for the time being is in charge of a vehicle on a highway.
Pedestrian. - Any person on foot on a highway. Provided that skaters, children's perambulators and invalids' chairs shall be considered as pedestrians when on a footpath but as vehicles when on a roadway.
Passenger. - Any occupant of a vehicle other than the driver or a servant of the owner of the vehicle actually in the performance of his duty.
Tremecer.-Any velicle which is confined to rails on a roadway:
Railless Car.-Any vehicle, other than a tramcar, which is propelled by electricity and is dependent on an overhead cable for it- power supply.
yotor Frhicle-Any velicle which is propelled by an internal combustion engine or by electricity; provided that tramears and railless cars are not considered as motor vehicles.
To liank.-To stand a velicle parallel with the kerb.
To Park.- To stand a vehicle at an angle with the kerb.
Vehicle Stand.-A portion of a roadway or other space specially set apart for the ranking or parking of vehicles.
2.- Every person using a highway, whether as a driver, pedestrian or passenger, shall thereby incur an obligation to facilitate the movement of traffic and promote public safety.
3. - No person shall walk on a highway in a dangerous, reckless, negligent or otherwise improper manner.
4.-No person shall walk on a highway in such a manner as to cause unnecessary obstruction to other traffic.
5.- No person shall drive a vehicle on a highway in a dangerous, reckless, negligent or otherwise improper manner.
6.-No person shall drive a vehicle on a highway or cause a vehicle to occupy any portion of a highway, in such a manner as to cause unnecessary obstruction to other traffic.
7.-No person shall enter or leave a vehicle on a highway in such a manner as to cause unnecessary obstruction to other traffic, or unless such vehicle is drawn in close to the kerb.
8.-No person shall load or unload cargo or goods on a highway in such a manner as to cause unnecessary obstruction to traffic.
9.-No person shall carry or place a load or any other article on a highway in such a manner as to cause unnecessary obstruction to traffic.
10.-Every driver or pedestrian on a highway shall promptly obey the instructions or signals of police on duty.
11.-No driver shall exceed a safe, reasonable and considerate speed, having due regard to the rights of other users of the highway to existing traffic conditions, to the state of the road surface and to the presence of dangerous points, whether indicated or otherwise.
12.-A driver shatl keep to the left hand side of the roadway--the slower his speed the nearer the kerb.
13.-A driver when turning a corner to the left shall keep as near the left hand kerb as possible.
14.-A driver when turning a corner to the right shall make a wide sweep and shall enter the new roadway (if. possible) to the left of its center line.
15.-A driver when passing a street island situated in the center of a highway, or to the right of its center line facing the direction of travel, shall do so to the left.
16.-A driver when passing another vehicle going in the opposite direction shall do so to the left.
17.-A driver when passing another vehicle going in the same direction (except a tramcar) shall do so to the right.
18.-A driver when passing a tramcar whethér moving or stationary going in the same direction shall, if practicable, do so to the left.
19.-A driver when passing a tramcar going in the same direction which has stopped to take up or set down passengers, shall do so at a slow speed and in a considerate manner; or, if necessary, he shall stop until the roadway is clear.
20.-No driver shall attempt to pass another vehicle going in the same direction unless a clear view ahead can be obtained.
21.-A driver shall slow down when passing over a bridge or street corner or rounding a bend where a clear view ahead cannot be obtained.
22.-A driver of a motor vehicle approaching a horse on a highway shall slow down or stop if necessary, or if requested to do so.
23.-A driver shall, in the event of an accident on a highway in which his vehicle is any way concerned, immediately stop his vehicle in order to ascertain the extent of any damage or injury and to render any necessary assistance. He shall remain until notified by the police that his presence is no longer required; or, in the event of no police officer being available, he shall report the occurrence to a police station withoat undue loss of time.
24.-No driver shall cause a vehicle continuously to overlap or travel abreast of another vehicle on a highway when by so doing an obstruction to other traffic is caused.
25.-No driver shall cause a vehicle to remain at the entrance to any premises in such a manner as to obstruct access thereto, longer than is necessary for the expeditious taking up or setting down of passengers or the loading or unloading of freight or goods.
26. No driver shall back his vehicle or turn it round in a roadway if by so doing he obstructs or endangers other traffic.
27.-A driver when stopping his vehicle in a roadway for the purpose of taking up or setting down passengers or for any other reason (except in obedience to police signals), shall do so as close to the kerb as possible.
28.-No driver shall cause a vehicle to stop to take up or set down passengers, or otherwise to remain stationary (except in obedience to police signals), between a street island and the nearer kerb; or, in the case of a centrally situated island between the island and either kerb,

## GABRIELE D'ANNUNZIO, LATE DICTATOR OF FIUME

The Italian soldier-poet,
who has oecripied the mublic eye for several months, 'is here shown in his Fiat

29.-A driver setting down or taking up passengers at any of the undermentioned places shall observe the following rules:-

Shonghai Club: - Set down facing South and draw off in the same direction.

Rank, on south end of Bund Vehicle Stand.
Masonic Club.-Set down facing North and draw off in the same direction.

Rank on north end of Bund Vehicle Stand.
Take up facing North and leave in the same direction.
Race Club Meetings.-Set down facing West and draw off in the same direction.
, Rank in Myburgh and Mohawk Roads.
Take up facing West and leave in the same direction.
Town Hall:-Set down facing West and draw off in the same direction.

Rank in Kwangse and Kweichow Roads.
Take up facing West and leave in the same direction.
Lyceum Theatre.-Set down facing North and draw off in the same direction.

Rank in Soochow Road facing Museum Road.
Take up facing South and leave in the same direction.
Victoria Theatre,-Set down facing East and draw off in the same direction.

Rank in Haining Road.
Take up facing West and leave in the same direction.
Apollo Theatre.-Set down facing North and draw off in the same direction.

Rank in Haining Road, moving to east side of North Szechuen Road north of theatre entrance, facing South, after 11.30 p.m.

Take up facing South and leave in the same direction.
Olympic Theatre.-Set down facing East and draw off in the same direction.

Rank in Jurkill Road east of Carter Road, facing West.
Truce up facing East and leave in the sime direction.
30.-No driver shall use a horn, bell, or other form of waming signal unnecessarily, or in such a manner as to cause public annoyance.
31.-The following signals are authorized and shall be used by drivers, ns required, for the information of other drivers mel of police on duty :-
(1) "I am stopping."--Wxtend the right arm vertically upward" or horizontally to the right and move it up and down.
(2) "I am larming to the right."-- Fixtend the right ame horizontally to the right.
(3) "I am turning to the left."- Wixtemd the right won horizon tally to the right, and wave it towards the left across the body
(4) "I "tm going straight on." lixkent the :wn lomizontalls forward.
 to the right and wave the hand in it forwind dimedom.
(In the case of at moter whicle having of left hand drixe, the corresponding sigmal must be mole with the left ame?
32.-No person shall stand or sit on or otherwise" occupy the footboard of a vehicle in motion on a highway.
33.-No person who is not a passenger in the said vehicle shall hold on to any part of a vehicle in motion on a highway.
34.-No person shall drive a motor vehicle on a highway who is not in possession of a license from the Council or the French Council to do so. Such licenses are issued by the Police of the respective Councils, after examination, to competent persons over the age of seventeen years.
35. - No person shall drive a vehicle on a highway when under the influence of liquor, or when for any reason he is physically or otherwise incompetent to do so.
36. - No vehicle shall be driven on a highway when such vehicle is so constructed, equipped, loaded or enclosed as to be dangerous, to obstruct traffic, to seatter its contents, to unduly damage the road surface, to create undue noise in transit or to prevent the driver from having a sufficient view for safety; or when by reason of inefficient brakes or other mechanical defect it is not under complete and immediate control,
37.-No vehicle, in respect of which an identification mumber plate (plates) or card is issued by the Council or the French Council, shall be driven on a highway miless such plate (plates) or card of the regulation pattern is affixed thereto as prescribed in the license conditions.
38. -No vehicle, except skaters, children's perambulators and invalids' chairs shall make usc of a footpath, of shatl enter or cross a safety zone.
39.-A vehicle driven on or acempyine amy portion of : hishway between the homs of smase and sumber shall cary one on mow lishted lamps as prescribed in the license conditions. Provided that no light carried shatl canse serions incomsonionce or danger to ant other now of the highway; that in the case of motor whicles 13 hich eary heat hamps only in front a suitable means be prosided for redneme the penser of the light; that when meeting other moter or howe drann whiches. or when using any highmay whith the ateat last of (atter liond and Wist of Muirhead Road, the full power of headlights be suitably reduced; and that all lamps carried be subjeed to apmotal be the Comme
 andible and sutheient waming of its apponde. and -hed in-trument
 whistles or hefls on motor whickes other thath these bethensmes the the Fife lurigade is prohibited.
41. I which in the semise of the Fiow brizate. When prowedme
 always have the right of way. On its approach all othere trattic shall immediately dran in to the sides of the remdans wheme it hall some
 pussed.





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# The Oriental Motor 

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## EDITORIAL

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'The widerpead sentiment in fithor of organizing the antomoble industey in the Frar liast happily is begimning (o) erystalize. In shanghai, Iatmentarly, there is an excellent powe eet of this hishly desimble resut being abherad. There has heen mosh tatk about as local trade onsambation, and severall mestings hate heen held at which the phoject has been disernsed and tentation atrangementa made for bringing the heads of the various estrablishments hew into as single organzation. Ind at this writing there is every assurance that such an organization will be effected in the immediate future.

There onght to be an organization of all the automotive men in the Fiar liast. Notice we say "amtomotive," as distinguished from "automobile." This distinction is mate with an eve to the future: to the time when wuto trucks, tractors, house lighting and power producing machines, airplames and other motor operated mathines, and accessories for all of these rohicles and mbehines, will
orril! as latgo a julace in the industry as the one now filled by the automobile.

WII these vehicles and machines belong to one family, lis ration of the fate that the gasoline motor is the base on which wach of them is built. The men who are confilmting to the wodemization of the Far East through Hhe distribution of these various motor driven machines "are, 1].ackere, "linds of a feather," and for their own henefit and for the henefit of the interests they represent they s.lould fock together.

It onght mot to he necesmary to emmerate the large mumber of hemofits that would accrue from such flocking together. The history of the development of the industry in the hesne comntries is: a history of collestive effort, manifecsted in seores of directions.

Tho many frople are given to saying: "Yes, that's all light at home, but things are different out here." Talk about extending the automobile market in China, for invamoe, and thesie faint-heated ones point to the lack of rouds ats an insummountable barrier. Well, how about the lack of roads in the United States when the automobile induatry was in its infancy? There was a time when the chief objection to the motor car there was that it could be used only a couple of months a year, the roads being knee decp in mud most of the summer and knee deep in ruts all of the winter.

Two things operated to overcome these landicaps, one, the sale of lange numbers of motor cars, and the other, united cffort on the part of those who were interested in the industry. And the smme causes will lead to the same results here. First of all it should be remembered that there must be automobiles before there can be roads, just as there must be water before there is a river. Non-owners of motor cars certainly are not going to bother their heads alout rads, and conversely, the owner of a motor car begins to bother his head, and the heads of a great many others, almost from the day that he becomes possessed of a car. Multiply the owners of motor cars, therefore, and you multiply in exactly the same ratio the forces that are operating to bring about road extensions and improvements. The cars must he sold hefore the roads can be built.

This is a simple tiuth, but some persons find difficulty in comprehending it.

When enough people in China own cars they will force the building of roads, just as they forced these improvements at home. They won't come otherwise, and if anybody thinks that a system of highways is going to emerge from thin air, or emerge from any source whatever except the united effort of motor car owners and motor car men, why, he has a few more guesses coming to him, that's all.

The things necensury to be done, therefore, if this desirable result is to be consummated, is to sell more cars, and to organize the industry. The first is necessarily a
time consuming process, but the second should be easily accomplished. It requires nothing more than a spirit of willingness and co-operation on the part of the men engaged in the trade. Giving expression to this spirit involves no outlay of money, and only a small outlay of time. And for this small outlay the returns, based on the experiences of those engaged in our own and other industries at home, are worth while a thousand times over.

Let's get together!

## A DEALERS ASSOCIATION

There was a time when trade in the world was accurately described in the somewhat homely quotation, "everone for himself and the devil take the hindmost." But the world has progressed and organized and co-operative effort has come to have its value in every field of endeavor. Business men have united in Chambers of Commerce for the general dissemination of trade news and mutual protection. Following the development of this group idea in all parts of the world, firms and individuals in the same lines of business have seen the advantage of associating themselves together for mutual protection and benefit and trade associations, such as the National Automobile Chamber of Commerce of the United States and dealers associations of cities and states have been formed.

The latest move in the development of a trade association among the dealers of Shanghai is now taking place in the formation of an aesociation of the automotive firms. The preliminary steps for the formation of the body have been taken and the preparation of the constitution and bylaws is now under way. The association will include all those firms and persons who are interested in the motor car trade, whether from the standpoint of car sales or from that of tires and and accessories.

The formation of this association is one of the greatest strides forward that has been made by the automotive industry of China since its inaguration. There are many problems which have and will present themelves that can be solved only by concerted and harmonious action-and such action can only be obtained through a dealers group working in cooperation.

One of the greatest problems that can attract the attention of an association of dealers is that of the groal roads movement. This movement is growing rapidly in scattering districts of the country but noeds ussistance to be centralized and connected. Heretofore the majority of the motor dealers in China have paid little or no attention to the matter of roads perhaps for the reason that no ono doaler could make any great impression by the inagumation of a highway campaign without the assistince of the others. Now that they are all together such a campaign beromest more than a possibility.

The very life and future of the motor car imlustry in China is bound up in the matter of rouds. Until suitable
highways are developed dealers will be forced by circumstances to confine their activities to the markets of the larger cities and the saturation point in these localities can be easily reached. The progressive native merchants and gentry of China have begun to show their enthusiasm in the matter of building roads and it is up to the dealers to aid them by advise and if necessary by concrete ideas and plans for road building.

There is also the matter of the legal protection of the motor car dealer and owner which can profitably receive the attention of the dealer. With plants such as those in China at the present time, labor difficulties can also be better settled by concerted action rather than the individual. There are numerous other problems that are impossible for the individual but that will be comparatively easy for the group to tackle.

The time is ripe for the association and there is no conceivalle reason for its not leeing a surcess. Every dealer rightly realizes that in the main his common interests are those of all of his competitors in the motor field of Shanghai and China and that thep can best be served by organization.

## EXCHANGE AND CAR PRICES

The word "exchange" is the term to conjure ly in the markets of the Orient. It is at one and the same time the Goddess of Prosperity and the Demon of Depression. Every ficld of endeavor shares alike in the fluctuations of this flckle Goddess either in dividends gained or losses covered. The automotive market of the Far East and rarticularly that of China is not examp from the morebent of the money market.

With car prices in varions parts of the world moving down, it would seem that areater impetus would ber given to car sales in all countries despite reduced production and busincess delreswion. Jut any reduetion that has bont made has been more than offee ly the fallimg cxchange in China.

With the (hmese dollare parctically on at two for one hasis with American curency, Amerian ains hate hy neressity practically doulded their price in this - +1 then of the world. And car prices from all conmtrice will comblank to renpond to the ertatice sumpering of exthange mat that
 stabilized.

It is to the vital interen of exary man mboly cont-
 - कery mownent for the stadization of the (himese dollate The bulding of the mint in shamehat will do mush town m this cond when it is completed amb if alfticient procure is

 simplification.

## THE PASSING OF TWO OF THE WORLD'S SPEED KINGS



SIR ARTHUR W. BROWN VISITS SHANGHAI

## Trans-Atlantic Flyer Makes Short Visit to Port City of China

Sir Irthur Whitten Brown, matigator of the famons trane-Atlantic airplane flight, and the only living survivor of the two who acemplished the flight, was in Shanghat during the month of December while the heat en which he was traveling stepped at this port. Ho was the guest of the (ouncil of the Engineermig soretery of China at a dimmer given at the Shanghai Club. The acting-president, I. Tuxford, presided.

Sir Sthar spoke regarding the futur of ariation as a means of commercial transportation and the need for optimism and encouragement. Other talks were made regarding modem day aviation, hir hathe was born and reared in Boston, Massachusetts, joining the Roval Flying Corps at the legimning of the war just patt. He recontly returned to (hina in the interests of the arronatical departmont of Tickers, Luk.

## HAVANA REACHED BY AIR

New Line Inaugurated Between Cuban Metropolis and Key West
Commorcial aviation has made Havana, a haven of tourists from the United States and elsewhere, accessible form the mainland of America in an hour and a quarter: The air line, whose fleet consists six eleven passenger Aeromarine flying boats, has been in operation for several months and has proven an unqualified success.

By the use of the flying boats the time between the ne:alest point in the United States and the Cuban city has been reduced from ore day to one hour and a quarter. The boats are controlled by former U. S. army and navy pilots ar. are equised with the luxtury of a Pullman car.

The round rrip between Key West and Havana is made trice daily at a fare of Gold $\$ 75$ a trip. Booking offices are mainained in all of the leading tourist agencies in the United States and at the principal hotels. "In addition to carrying passengers, the operating company is also under constract wili the Crited States government for the transportation of mail.

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

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# JAPAN AS A MOTOR MARKET <br> Japanese Responding to the Automotive "Bug"-Trained Mechanics Needed <br> (B) AN . DMERICAN ComRESPONDENT) 

W
 owns approxmately 10,0101 antomol ble:practicell! all Imerican-mbade, due 10 the tex during the war French, English and (ienman (a)r: W. . F impossible to obtain.
 becanse it is a morle of travel radically different from any to which they have been accustomed. Berides, they are not mechanically inclined, and the operation of an automobile has seemed to them (cimplicated and dimserous. The antumobile has gradually outgrown prejudice and other serious handicaps under which it has labored for years and, in all of the Far East, is just baiming to come int: it: own. If it had net been for the importation of moter car: br American and Eturopean residents, it is doultful whether the depanese wond take any interest in them for at least another generation : but now the seed hat ripened, and a rich harvest is ready to be reaped 1 ! x those automille manufacturers who are wise enough to grasp the opportunity.


The Japanese are not mechanics and antomotive worliny parts are mysteries unsolver

Today the automobile situation in Japan is similar to that which existed in the States 12 or 15 years ago, in that many of the better class own cars, and their friends and neighbors are beirg stung by the bug of envious latite. White the percensage of automobiles to the poplation never will be as high there as it is in Amet,a, done to the comparative porerty of such a large proportion of the population of Japan, nevertheless loth of those countiles have thousands who are finarcially able to buy automobiles.

A well informed authority in Japan stated to the writer that the prospective customers for automobiles in Japan silone amount to more than $1,000,000$. That this is nct an exaggeration can be appreciated by one who realizes the

Gre:t wailth of the Japanese nation; who travels through: the country and who observes the many handsome homes, the numerous factories, mills, shipyards, etc. The rice and stlk industrie a alone have produced millionaires galore, to ra! nothing of such industries as ivory, tortoise shell, pearls, jewelry, cotton goods, wocdworking, matting, fishing, stoamships, tea, objects of art, etc., etc.

Last May Japan was thrown into financial and commercial ןanic, due to excessive speculation in the silk market an! the iemultant mash in prices, following a period of extrerre niflation. Almost overnight the price of raw sllk dropped from 65 to 15 (to quote as we would cotton), and continued to go lower. As the silk market of Japan is comparakle in importance to the cotton market in this country, the comsequences wele most serions.

The man who had attempted to corner the market controlied or was closely afiliated with a number of the largest banks, which closed their doors when the corner collapsed, with the recult that money was most difficult to obtain, credits were tied up and the purchasing power of the entire countr was rednced almost to the vanishng point. Goods which had been ordered from abroad accumulated in thou-. :ands of tons on the docks, because Japanese importers c.uld no mioc the necessary funds to take them up. The storehouses of factories and the shelves of merchants were filled with raw material and merchandise. The recent financial crisis has affected the automobile business, and for ? Lew: months put a quietus on the importation and sale of cars; but Japani is rapidly recovering from its panicky condition; the financiers have gotten together and, with the aid of the government, are mending and rebuiiding their monetary establishment so that, in a very short time, normal conditions will again prevail.

The main highways of Japan and the roads adjacent to the large cities are of crushed rock, on dirt bases. For the most part they are kept in good condition, so that motoring is jle:aturalle and comfortable. The by-roads are similar to American country roads, both in character and upkeep. Whil as a whole the roads in Japan are not to be compared with those in Ner England or California, nevertheless they are not nearly so bad as pictured led to believe. Japan nee?s thie antomibile because history has proved that good. reads fnitow the increased use of motor vehicles, and there is no question that already Japan is awakening to the necessity of well paved roads as the means of better and quicker interurban communication. A commission has already left for tile purpose of making a thorough investigation of road.


## T

IRE trouble is a discomfort of motoring. Most tire trouble is the result of the old-time tire construction.

Tire makers, by one expedient or another, have tried to develop the fabric type of tire beyond its present limitations.

Some new construction; based in a different principle than that generally employed, was urgently needed.

This new construction has been achieved in the Goodyear Cord Tire.

Fabric tires are not resilient under impact-when they hit a stone or bump the fabric is strained. Often, under severe shock, it breaks.

Built up from several layers" of strong canvas laid ply on ply, the cross-weave in this canvas retards flexing and makes the tire relatively stiff.

Goodyear Cord tire-body is built from several layers of parallel cords placed diagonally one upon the other without interweave.

Between each layer and around each cord is a generous insulation of quick rubber.

The layers of cords are stronger than similar layerr of canvas, and there is no cross-weave to hamper theis free play under stress.

Goodyear Cord Tire yields to an obstruction and recovers. The tire is not strained -it does not break.

Blowouts and like troubles are minimizol. Ind the same construction that overcomes them makes (imedsear Cords cousier ridiny.

## THE ENGINE WEIGHS 90 LBS.

New European Power Unit Said to Develop 32 Horsepower

A new power unit which is making its appearance on the English market this year is the de Marcay. Its design is strongiy reminiscent of both Hispano-Suiza and Bugatti practice, and its efficiency can best be judged from the fact that at 4,000 r.p.m. it is stated to produce $32 \mathrm{~h} . \mathrm{p}$., while its weight is under 90 lb ., complete with carburetor and magneto.

This engine is intended to be fitted to the de Marcay voiturete. Two types of these small cars are to be sold, one having an air-cooled Anzani engine of the V-twin type,

which has a bore and stroke of 85 mm . by 87 mm ., giving it a capacity of 1,000 c.c., while in the larger chassis the four. cylinder water-cooled unit will be installed.

The car itself is a very interesting proposition : in the construction of its chassis lightness has been obtained by simplicity of design. The two frame side members are perfectly straight and converge slightly towards the front. Five cross members are fitted, while situated outside the frame members themselves are the attachments for the four quarter-elliptic springs. In the case of the air-cooled model, the engine is mounted across the frame, a leather inverted cone clutch taking the drive through metal disc universal joints to a centrally-situated three-speed-and-reverse gearbox. From this an open propeller shaft and bevel gears transmit the power to the differentialless back axle, which is again of very simple manufacture, the drive shafts revolving in bearings on the spring mountings and taking the weight as well as transmitting the power.

The Anzani air-cooled engine is an interesting unit, in that although side-by-side valves are employed the inlet valve is situated opposite the centre of the cylinder bore, which arrangement causes the exhaust beyond the cylinder proper, thus ensuring that this, the hottest part of the engine, has the maximum benefit from cool air. In order further to assist cooling, two separate four-bladed fans are mounted on bosses on each cylinder and are driven by three-point drive by a round leather belt, which takes its power from a pulley on the crankshaft.

Sturdy simplicity is the main feature of the clutch, and ease of manufacture is seen in the design of the gearbox tof. It has projections cast on each side, one forming a gate for the gear lever, while the other serves as a ratchet for the hand brake control.

The four-cylinder engine is designed so that it car be l-uilt up in unit construction with a three-speed centrallycontrolled gearbox, the whole forming a very compact as-


The de Marcay cyclecar is air-cooled
sembly. The overhead valves, of which there two to each cylinder, are operated by rockers in turn operated by an overhead camshaft, this being driven through bevel gears from a vertical shaft at the front of the engine. The oil feed is of interest in that an archimedean thread is cut on the vertical shaft, which thus deliveers oil to the cams and rockers, overflow into the valve stems being prevented by a suivable baffle plate. The whole is neatly enclosed in an aluminium cover. The crankshaft has only two bearings, but as it is little over 9 ins. long, should certainly not be subject to periodic vibration. The mechanical finish is excellent and typical of French small car manufacture at its best. The air-cooled de Marcay car sells at $£ 255$ complete with compressed acetylene lighting set.

## R.A.C. CERTIFIED TRIAL <br> of the HUDSON SUPER-SIX and the ESSEX over the classical London to Edinburgh road, on Top Gear.



## HUDSON SUPER-SIX

Speed on Brooklands 70.04 m.p.h.

London to Edinburgh On Top Gear

Petrol Consumption 21.86 m.p.g.

Every 1921
HUDSON SUPER-
SIX and ESSEX
is a London to
Edinburgh type.
Na change were made on either car batwe $\quad$ n Brooslands and Edinbirgh to carburetor or gear ratio. What better proدf is there of the economy, efficiency, and honest value of the HUDSON SUPER-SIX and the ESSEX?


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## ROAD MAY OPEN NEW RESORT

Tangchuan Has Mineral Sprngs and Game of all Kinds in Abundance

## By J. D. Sullivan

The putting throngh of a motor rand from the sit of Nanking and the erection of a modem lotel, all ,h wheh is: aow being contemplated, mas be the camse at makitus


The Hotil n.t Tun!gchum!
 the inost popular resorts of China.

Sillated in the low lying hills of the lamotal Mci Shan Mountains, the little village of Tangchuan varies but slighty fom the many -imilat hambers seathend thomeromi the province of Kiangeu and Amhwei. The distinguishing
 hot sulphur springs. These springs, not over strong in
 very beneficial to the health, and people from the surrount ing district take advantage of it.

The water while bet is not oul eatahly and one : an swim in the clear pools as it bubbles up from the ground. The sting in the olden dity- was the lavorite bealth rewnt of the ancient Ming rulers, whose headepaters: Whe then in Nanking me:uby. The old road over whith the laperizl
 preserved though entirely neglected for centuries and may form the hase of the new motor wad comtemplated. I'm?-


Mr. Sullican cnroule via "man-back"
chuan is fifteen miles from l'ukow and the construction of a motor road would make it one of the most picturesque and beautiful drives in all of China. It would also serve to increase the popularity of the springs and make them attraclive !articularly to foreigners.

Tangchuan is a wonderful hunting ground, deer, geese, fheatante, duck, mallits and maller game are in plentiful abundance. Mr. Kung, the Chinese owner of the springs, delight: in thone pledsunes that only the hunt can give and takes great pride in showing visitors the head of a spotted deer he obtained from North China.

Mr. Kung, who is the prometer of the road and hotel, is the owner of a fine modern residence in the village, in Which he hats steam heat, clectric lights and telephone service hom Nanking.


1/r. limus. the hotel oimer), aml at deys buy in the field
'ithene i.s no doult hat that Tangehuan could rival any lowith re:oll in China if it had the adrantage of a well laid read suitat le for moter cars. It present it is only a day's ride from Shanghai.

## MOTORS IN CANADA.

Tlae nomler of matio rehicles registered in Ontario is 174,300 , more than half of the cars in the whole of Canada, the number of automobiles in the Dominion at the present time being 340,000 . Toronto, with 30,000 automobiles for a lopulation of frre, orow, has more than any cther city in the Dominion and boasts that it is the most motorized of all large cities in the British Empire. Canadian production of Ford cars and trucks during the year ended July 31st, 1920, was 55,616 , arart from Fordson tractors. This figure compares with 39,112 for the previous year. The number contemplated for the present year is 75,000 .

## ASK THE MAN WHO OWNS ONE

## CHIVROU

W E can make immediate delivery on the 2-Seaters and 5-Passenger 'Tourings, and also on the 5-Passenger Sedans, 7-Passenger Limousines or 4-Passenger Coupes.

7 HESE cars represent the utmost in motor car values and are produced by the largest Motor Car Manufacturers in the world to-day.

IF you are thinking of becoming a car owner be sure and get all the data concerning the Chevrolet.

Wholesale and retail distribution in China controlled by

## H. S. HONIGSBERG \& CO., lnc.

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Largest distributors of Automobiles in China

## Olympic Showed no Radical Departures

(Continued from l'uge 11)
attention was the new ('arden two-pansenger £100) ("ar. 'This little vehicle intorporates many interesting and nevel features.
'the two-cylinder two-stroke engine has the gearmos and cuankeases cast in one, the unit being situated on the rear axle and partly he!d by a frame cross-member, which


The $\because$-cylinder C'atiden, £loo car
acts as a fulcrum. Two speeds are provided, and to ol tain these a large constant-mesh gearwheel is driven direct through a pinion on the crankshaft. The live axle forms the main shaft of the gearbox, top gear being direct through the constant-mesh pinion, whilst the lower ratio is obtaind by driving through the layshalt, giving a total reduction of $1 \%$ to 1 . The ratio of the top gear is 4 to 1 .

A five-plate metal-to-metal clutch is incorporated in the flywheel and is operated by a cam positioned in the crankcase. A separate casting carries the magneto and also acts as an oil chamber, with a capacity of cne quart, which is sufficient for 150 miles' running. The oil is pumped direct to the cylinder walls by a plunger pump, and the magneto is driven by a roller chain from the crankshaft. Both brakes, which operate on a single drum carried on the rear axle, are of the external contacting type.

To the critical engineer, the fastidious owner, or the casual siohtseer, the Lanchester exhibit


The Straker-Squire features seperate cylinders
was, as usual, one of the most interesting features of this year's Show.

The $40 \mathrm{~h} . \mathrm{p}$. six-cylinder chassis is now a familiar model, the examples shown being substantially as produced during the past year, and, although it differs very considerably from and marks a tremendous advance on pre-war Lanchester design, it is worthy of note that many of its
mechanical features are actually as used in the very early models of this famous make, notably the epicyclic silent gears, the Lanchester patent worm drive, and the Lanchester cantilever suspension.

Undoubtedly the leading exhibit was the magnificent $V$-fronted saloon-limousine with seating accommodation for seven persons, a car which for elegance in design, quality of workmanship, and the general luxury of its appointments, ranks with the best of the world's first-class automobiles.

The Lanchester cantilever springing merited attention, and for the convenience of interested visitors a section of one of the shrings, together with its roller shackle, was displayed as a separate exhibit. As previously announced, the price of the chassis is now $£ 2,200$, including compiete equipment.

Attention was arrested by the brilliant streamlined form of the sports model Straker-Squire shown. This car is mounted on the well-known P. A. type chassis, exactly similar to that of the car which has performed so consistently well at Brooklands this season. The doors at the side of the body giving access to the boot are well worthy of attention, as is the spare wheel mounting, and the car represents a combination of comfort and sporting attributes which will


Angus-Sanderson 4-passen ger
undoubtedly appeal to a very great number of enthusiasts. Over $80 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. is attained by these cars. The Show chassis, with its sandblasted aluminium parts, exhibited no striking changes from last year's model, with the exception that the radiator has been somewhat raised to give a finer body line, and the water rump is now placed in front of instead of behind the timing gear cover. The clutch withdrawal mechanism, too, is now mounted direct on the rear of the engine, protecting it from any effect of chassis flexation. The car is interesting in that radiator shutters, thermostatically-controlled, are fitted, making for higher efficiency. During the war Gwynnes Engineering Co., of Chiswick, Hammersmith, and Vauxhall, were engaged upon the production of Clerget and Le Rhone rotary aircrait engines. Since the armistice they have concentrated upon the Albert car, incorporating in its manufacture the high degree of engineering precision utilized in the production of airplane engines, and this, combined with the car's up-to-' date design, make it a very attractive proposition.

The Albert commends itself primarily to the motorist of moderate means who requires a lively four-seater at a reasonable cost. Four models were shown, and the stricped
(Continued on page 30)

## We are hauling



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 which is only one of our many contracts
## HOW ABOUT YOURS ?

Phone Your Order To

## THE CHINA GARAGE Co.,

Operating

## C. G. C. TRUCK SERVICE

## HEIMENDINGER GOES ON LEAVE

Will Visit France, England and the United States


Julien Heimendinger, formder of the Auto Castle, one of the thiring and last growing membern of Shanghais gatage family, is saling on Jamary 15th be the Empresm of Asia for a combined business and racetion trip in France, England and the United States.

Mr. Heimendinger will be abeent from Shangha for a period of approximately ten months. He will spend two months in the Cnited stites, going from Yancouver to Los Angeles, Chicago, Detroit, Toledo and Cleveland, as well as other centers of motor car production. After this visit he will embark for France to visit motor factories there. His vcaation will be spent in Paris and Lausanne, Switzerland.

The Auto Castle was founded in 1914 by Mr. Heimendinger, who originally came to Shanghai for Sennet Fretes in 1909 after having been associated for a number of years with the leading motor manufacturers of Europe. After having had sole and personal direction of the business for five years, Mr. Heimendinger was joined in August, 1919 by his two brotsers, Sylvain, as supervising engineer, and $A$. Heimendinger, as service manager.

Mr. Heimendinger had hoped to make his present visit immediately after the arrival of his brothers, but the press of a fast growing business prevented it until now. The growth of the Auto Castle is indicated by the fact that the company has just closed for three mow of Jand on Route Vallon in the French Concession, Shanghai, on which storage and repair shops are to be located. The work of construction has already begun.

During the absence of Mr. J. Heimendinger the direction of the Auto Castle will be in the hands of his brothers, Sylvain and Alfred. While away Mr. Heimendinger will arrange for further representation of French and American motor cars and automotive accessories.

Upon his return, Mr. Heimendinger will open branches in Tientsin and Peking. He will be accompanied by an automotive engineer from one of the French factories, who will join the Auto Castle staff.

## Olympia Showed No Radical Departures

(Continued from page 28)
chassis afforded the motorist an opportunity to admire and inspect its design. The engine is 68 mm . by 103 mm ., the overhead valves, which are placed in detachable heads, lemg opreated hy means of intemal push rods. Forty miles per gallon is claimed, and it is pleasing to find on a car of this: matue that a fou-speed gearlux is stendard.

Of the models shown, the two-passenger coupe is priced at $£ 806$, while the popular all-weather saloon car, which accommodates four personss, sells at $£ 786$. This new allweather body is made very light, and the hood may be saised witlout effort and even when the car is traveling.

A bare chassis and three complete models of the Cubitt were shown, a standard model torpedo four-seater, a two to three passenger with nickey seat, a hood and screen being provided for the latter and a V-iront saloon model. The chassis is one of the best known quantity producfion models, and incorporates many interecting features. The four-cylinder monobloc engine has the cylinders and ton half of the crankcase cast tcgether, the cylinder head casting being removable. The valves are completely enclosed by a single aluminium plate, and an electric starter is incorporated as a standard fitting.

The positioning of the front Hardy universal joint is somewhat novel, the fabric disc being bolted direct to the foot brake drum. Final drive is through an open cardan shaft to an overhead worm-driven rear axle of the pot type, and the hand brake, which is of the internal-expanding type, clperates on drums bolted to the steel disc wheels. The springing is particularly good, the rear springs being almost flat, and all the eyes being provided with oil-less graphite and phosphor-bronze bushes.

One of the best known attempts of the British industry to cater for the motorist who requires a car for general service is the 11.9 h.p. Bean shown this year with several detail improvements. The engine is particularly compact, and is designed for strenuous service. The radiator fan has now four blades of cast aluminium, and and is driven by means of a single belt, which also operates the dynamo. The provision of an aluminium flange between the engine base chamber and the frame members, in addition to avoiding the use of an under pan, makes it impossible for nuts or other items to fall into inaccessible positions. The cone clutch is a very light aluminium casting with fabric lining. A clutch stop is now fitted, and there are fabric joints between the engine and the gear box. In aprearance the car is well balanced.

The specificiations are $11.9 \mathrm{~h} . \mathrm{p}$. , four cylinders, 69 by 120 mm . ( 1,795 c.c.), fully forced Iubrication, cone clutch, three speeds, separate gear box, helical bevel back axle drive, semi-elliptic front and rear springing, 30 by $3 \frac{1}{2}$ in. tires on steel wheels, Smith electric lighting and starting.


## yo RIDAN P Pithouelle

JOMEN with a natural appreciation of comfort, atmosphere and poise, find this car irresistible in its compelling color and air of refinement.

That intuitive sense which knows the genuine at sight has awakened women's keen interest in the Jordan the country over.

The Jordan Silhouette bodies, as the well-informed already know, have been accepted as models by those who do not hesitate to follow intelligent leader-
ship. In exquisite contour, warm colors, and studied detail in workmanship, they have marked the passing of the oldthe advent of the nerv.

Here is a car-high-grade, light in weight, good-looking, perfectly balanced, rattle-proof, comfortable, economical, and striking in performance.

This is a car for the experienced owner who has acquired a sense of real motor car value.


## Sole Distributors For The Far East

## SHANGHAI MOTORS CORPORATION

## 124 Szechuen Road- 237 Lungmen Road

## NOTES FROM HERE AND THERE

Stanley J. Grace, special foreign trade representative of the Niller Rubber ('omprany, Akron, Ohio, is visiting the Shanghai and North China territory.
Y. A. Dodge, president of Dodge and Semmour, hak. is on a tour of Singapore, Java, India, and Sitign. He will return to Shanghai next month.

Major T. N. MeComell, fatery reperentative of the Fond Notor Company in the Far Last, phased throngh Shanghai on the Enpres of Asa, Jenmay 15, en-lonte to the United States. He will retmon to the Far Bast nest fall.

The streets of Hangchow have now ben widenel se as to accommodate motor cars and a company has been formed for the operation of a hire sirvice. For the present only the principal streets of the city will be open to moter traffic: bui later developments will opkn wider ares. A license fee cf $\$ 10$ a month has been inangurated by the provincial administration.

Glover Brothers, who have been operating a vulcanizing and tire requing business at 129A Bubbling Well Road, have sold their plant and business to H. S. Honigsberg and Co., Inc.

Royal H. Graves, who has been in the field for the General Motors Export Company since October 1917, has reached the home office in New York. During his trip, Mr. Graves visited the Philippines, Japan, China, Java and India. Mr. Graves will depart for Colombu after a short stay in the United States to make his headquarters in that city.

## CITROEN PIONEERS CROSS COUNTRY

## Trip to Peking from Tientsin and Return Made in Eleven Hours and Ten Minutes

Pushing their way over trails and ill-kept wagon roads, two Citroen cars on January 8, made the trip from Tientsin to Peking in 5 hours and 50 minutes, from which must be deducted one-half hour spent at Tsaitsun for lunch. The two cars left the city of Tientsin at eight o'clock on the morning of the eighth and arrived in Peking at half past one in the afternoon.

The return trip was made on January §, over a more direct route in 5 hours and 20 minutes. The gasoline consump tion on the outward trip was three and one-half gallons per car and on the homeward bound journey three gallons only. The party making the trip included: Mr. Battegay, agent for China of the Citroen, Mr. Pinier, Colonel Ting, Chen E. Sung, Chen E. Tai and two chauffeurs.

The particulars of the trip have been made public in Shanghai by Mr. Osterberger of the Grand Garage Francaise, who are the agents for Central China of the Citroen.
H. S. Honigsberg, managing director of H. S. Honigsherg and ('o., hne., is in North China on a tour of inspection of the territory and is also visiting the Peking hameh of his organization.

For the purpose of pomanig their Income Tax ietums: for the seer 1020), the American (hamber of Commolee, shanghei, sugesta that Ansticans in China use the following rates: Mex. $\$ 100.00$ equal Gold $\$ 43.10$, Taels 100.60 equal (iold \$59.86.
P. ('. (coleman and a paty of frionds of Tiontsin recently made the trip, through from that city to Peking and return. The trip was made in a National. Six driven by C. M. Robertson of the Tientsin Motor Car Comfany. On the outward trij the luad was lest a number of times due to large snow drifts. The trip to Peking was made in sevon hours, with a gasoline consumption of eleven gallons. The time from Peking to Tientsin on the return trip was five hours and thirty minutes, the actual driving time being four hours and forty-five minutes. The distance of the trip to the capital was 121 miles, the return trip being made over a shorter route of 91 miles.

The Central Garage Company, Shanghai, has moved into its new building, 9 Hongkong Road, the structure heing ready for occupancy on January 1st. The tire and hire service departments of the company will be kept at the Jinkee Road plant for another month.

William F. Stevens, export representative for Hare's Motors, New York, is in Shanghai for a month's stay as a part of a business tour of the Far East.

Alfred B. Peacock, foreign sales representative of the Paige-Detroit Company, recently passed through Shanghai enroute from Japan to Manila.
H. W. Hunter, formerly of Honolulu and New York, has arrived in Shanghai to investigate the automotive situation in this city and elsewhere in China. Prior to the war Mr. Hunter was identified with American motor interests who maintained distributing agencies in Petrograd and Moscow, specializing in motor trucks.

Colonel F. V. Holt, adviser to the Aernautical Department of the Chinese Government, and Colonel Tcheng Hung, a representative of the department, are now in Shanghai making preliminary arrangements for the establishment of a Shangkai-Peking air mail and express service this vear. Sites are boing passed upon for the location of the Shanghai airdrome.

George A. Marshall, formerly with H. S. Honigsberg and Company, has joined the Central Garage Company as sales manager.

## $\square$



## Goodrich Tires

## H.S. HONIGSBERG \& Co. Inc..

Exclusive Distributors

Shanghai, Peking, Tientsin.
All Goodrich Tires supplied the Eastern Trade are a product of the Akron, Ohio, factory.


A super-sport model, designed by Kenneth Staley, former hire service manager of China Motors, Ltd., built on a light six chassis. The body work was done by the Star Garage plant of China Motors, Ltd.

## DAVIS JOINS SHANGHAI TAXI COMPANY

## Former Central Garage Man Will Be General Manager of New Public Service Corporation

John TV. Daris, former manager of the used car department of the Central Garage Complany, has resigned his prosition with that company to accept the position of general manager of the Shanghai Taxi Company, the newly organized public service motor comporation.

Mr. Davis came to Shanghai last year from Honololn Where he was the owner and opsator of an acceswory and service firm.

.John II'. Davis,

Gencral Manager,

Shanghai Taxi

Co., Ltd.

The Shanghai Taxi Company, operating the "Tellow and Black Taxis," is now under way and the fleet has been a success from the start. The cabs are in evidence upon the streets of the city at all times and add a new note to the hire car industry of the port.

The company has recently placed an order for an additional twenty-five cars to be put in service with the present fleet. The following stations have been established to ex.

## NEW ELECTRO-PLATING FIRM OPENS

## Company Will Specialize in Automotive Equipment and Rehabilitating Old Accessories

Specializing in the plating of automotive equipment and the rehabilitation of metal work of motor cars, a new industry recently established in Shanghai is that of the Electro Plating Company, 24C Iulin Road.

The opening of the new firm will be a boon to motorists; surplying as it will a want that has been long felt for plating and similar work. Heretofore it has been practically impossible to get work done that would withstand the varying climatic conditions of Shanghai.

An exhibition of articles plated by the company serves to convince the visitor to their plant of the expertness of their knowledge and workmanship.

All of the work is being done by foreigners who have been brought up in the industry abroad and understind plating in all of its branches, nickel, copper, silver, bronze and zinc.

## DELHI MOTOR SHOW NEXT MONTH

## Motor Trade Association Staging the Show

The opening date of the Delhi Notor Show has been fixed for February 7, 1921. It will be held under the auspices of the local Motor Trade Association, in conjunction with the Delhi Motor Club. The organizing secretary is Major Morgan, Delhi Motor Show, Delhi. The Department of Overseas Trade state that it will be possible for those who are exhibiting at the Ceylon Show to pack up and transfer their exhibits to Dehli.
tend the service over ail of Shanghai: Frenchtown station, Rue Lafayette; Siccawei station, St. George's Farm; Testern station, Lungmen Road; Central station, Woosung Road; Yangtszeroo station, Iangtszepoo Road.


THE enclosed models of the AUBURN Beauty-SIX are characterized by the same verve and grace of line which won such marked favor for the Beauty-SIX touring models. Here again, you find daring mellowed by experience, conscious artistry tempered by discretion. Here again, you find ample room for luxurious comfort rather than mere riding space. In elegance of appointments and fittings these new AUBURN Beauty-SIX models eminently satisfy the most discriminating.

AUBURN enclosed models for Fall and Winter are now being exhibited by AUBURN representatives


EXCLUSIVE AGENTS FOR CENTRAL AND NORTH CHINA

## THE FRANCO-ASIATIC TRADING CO.

## LABORERS MAY OPPOSE TRUCKS

## American Writer Sees Value to Automotive Transportation in Chinese Labor Batterlions

That coolie politics is hatring automotive trampontation and its development in the for liast is the ominion wisal by Joy Aden, an American writer, in a lewent is:-n, of "dutomotive Thdustries." The problem is the same that wire fought ont and solved hy the Imeritan mamula:turess of farm machinery when farm labor opposed the reaper and the binder. Mr. Alden's views follow :

While it is not generally appreciated in this comntry, there is a movement on foot thromghout the Far biast that is of gle:t significance and which will ultimbtely mein much to the American exporter of motor vohicles.

The movement is funsored ly the members of that great amy of coolie laborers from (hina, French IndoChina and Malaya who went to France and wo:ked behind 1.he lines of the Allies. These thousands of members of the yellow race, after having passed through Canada, are now home again on their native soil. These returned soldiers of the Orient are different men than the soldiens that left (hina's shores years ago to answer the call to wate. They have gained a wider perspective.

They have come to the realization that in other parts of the would human muscle takes a back seat to mechanical and motor muscle. They have breathed in an atmosphere of twentieth-century energy. - And their eyes have net their cobwebly minds to thinking and an organzation of returned Chinese soldiers has now been effected.

Keen observers of the situation in China, with its $400,000,000$ people, declare that a new era has dawned, in which the retumed chinese coolies are playing a highly important role. If cheap coolie labor can be eliminated in China-if the millions, now engaged in catrving can be turned to production and constructive work and mechanical and automotive muscle repleces human musele, China ungtestionably will become one of the world's greatest nations.

And this movment, from the viewpoint of possibilities in foreign trade, holds greater opportunities to the American exporting manufacturer of motor vehicles than to the oxporter of any other manufactured productin. That the time is coming when motor tracks and delisely cars will do the work that is now being tone on the backs of man is the conclusion of those who have wateded the New Sluit of China.

American manufacturers of motor vehicles overlooked a great opportunity to hasten the acceptance of modernity by the great chinese lepullic when that great army of coolie laborers were hurried through Canada from France on their way home. While it may have been an unwieldy undertaking, there is no question hit that there would have been remarkable results if these coolies were taken on a tour of some of America's leading industrial centers and shown how things are done in this day and age in a de-
veloped country. True, these coolies saw much and absorbod much duing their term away from their native soil, hut they fould hare been givon an opportunity to have scen more.
[t is not necessarily the leaders of business and commerce in China, Japan and other countries in the Far East that the Americans want to cater to in developing these countries as fertile markets for the motor vehicle. Quite to the contrary, it is labor they must seek and educate, especially in China. These are the persons who, by the wheap ucs of their muscle, are fighting the automobile. And, irreppective of what rising wages may mean in counthes such as: the Cuited states, there can be no hesitancy in acclaming the genexal advance in the cost of human muscle now taking place in the Orient.

In the great drives for trade being waged by American exporting manufacturers of automobiles, tires and kindred products, obstacles are being encountered in many sections of the world that will require systematic educational (ampaigns to eliminate. It is in China, Turkey, French Indo-China, Siam, India and elsewhere in the Near East and Far Bast-markets of immeasurable opportunitiesthat the educational compaigns should be centered, as it i:- hese that haman muscle is successfully resisting the motor vehicle as a mode of transportation.

While in the I'nited States the motor truck is becoming the means of short haul transportation of everything from packages of hair pins purchased at the department store to loads of forest giants, across the oceans brawn is the chief agency of transportation. This is especially true in the Orient, where human muscle has for centuries been about the cheapest commodity money can buy.

When it is declaxed that the total number of motor vehicles in China and Japan combined do not exceed the number of automobiles that pass given busy corners on Fifth Avenue, New York, or State Street, Chicago, during an afternoon two-hour period, some conception of the tremendous potential demands for American automotive vehicles that exist in these two countries that hold within their confines nearly one-fourth of the population of the entire world can be gained.

These potential demands will become actual demands as soon as the Orientals are educated to an appreciation of what the motor vehicle means to their respective countries in the matter of development as well as to the individuals themselves in the betterment of their economic conditions. In considering the opposition of human muscle to automotive muscle, however, several points must be taken into consideration in order to understand the situation clearly. In the Orient, flagrant ignorance of the value of motor vehicles is the chief cause why they are not used to any appreciable degree.


## Maximum of Comfort with Rare Beauty and

## Real Mechanical Excellence

CHANDLER closed cars, the big handsome sedan and the equally splendid coupe, appeal to discriminating men and women seeking the most comfortable means of transportation for their daily requirements in any season and any weather, coupled with assured mechanical excellence. They are first preferred cars among such buyers.

Substantial and durable in their splendid construction, most pleasing in design, lustrous in finish, deep cushioned and attractively upholstered in silk plush, they bring to you all that you could desire. They free from
objectionable outside door hinges and mouldings that mar.

The Chandler Sedan seats seven in real comfort when the spring-cushioned auxiliary chairs are in use. The Coupe seats four in equal comfort.

Chandler closed car bodies are mounted on the one standard Chandler chatssis, now in its eighth year of constant development and refinement, and featured and favored for its marvelous motor.

These closed car bodies compare favorably with the similar bodies of the most costly cars.

## CHINA MOTORS, Ltd.

(Formerly The Shanghai Garage Co., Ltd.)
STAR GARAGE
EASTERN GARAGE
Man fimow Room
Star Garage, 125 Bubbling Well Road, Shanghai.

## FOKKER INVADES UNITED STATES

## Famous Designer of German Plane Seeks New Business Field

Antheny II. (i. Fohks, imsonter of the Folke.


 ably in an effort to sell planes to some banch of the (iovern-



A. H. G. Folker. Dutch aivplane nesigner. (1mpl Mrs. Fokiker photographed on their arriral in the C"nited States

While Foliter's visit is pmanily a seath for business, ne will take adantage of the opportunity to inspect American aimplane plants and sludy the progrese of aviation in this comber. He already has lecked over the coutise phat at Mineola.

In some respects Fokker's views on the future of aviation ccincide with those of Amercian makers of sircraft. He woes not befieve manfactuers should ru-h headong mo the building of all metal planes but should await the results (l) cearenl-tudy and expolimentation before taking so mali...l a step. In this respect his opinions differ from these of Jr. Junker and other Germans who are attempting to sell American on the all metal plane in which they have been pioneers, chiefly because of necessities imposed by the wier.

Fckker was accompranied to the States by his secretary, Rolert ]3. (. . Noordiyn, fomerty chief engineer of the Ahnsthong Whitwoth works in England. Whike he Luilt planes for Germany during the war Fokker never lost his butch citizenship. He asents that he offeed his mat chines to England and the United States in 1912, but they were refused and he then tumed to Germany. He never was in the German army, however, or in the service of the $G$ German Government.

The fuselage of the Fokker pursuit plane, acknowledged by the Allies to have been the fastest used in the war, was
made of steel and the winge of wood, without struts or beme. Juat infore the amistice wats signed Fokker had inncharl a new machine ginn designed in fire 4,800 shots a. minute. He explained this by soying that the Allies fat fix times as many flanes as (iemany and it was meanty to mak a gun which nould shoot six times as fast.
'Tl... Dutch inventer said his new commercial airplane was canying the mail daily between London, Brussels, Berlin, Hamburg and Copenhagen.
"The feature of my machine," he said, "is the canti'crer wing, having no bases and attached to the fuselage by four bolts, eliminating adjustments. The frame is of seamlose tube stecl. The wing is consitucted of three ply wood. responding to strain without deterioration and capable of sperting six thens the nomal lad. An altitude of 1,000 meters can le attained in 40 minules with a load of 1,55 ; lb. The machine will carry six persons, five hours' fuel supply and develops 183 horsepower with a speed of 105 milos an hour.
"Next year we wiil have 12 machines in the Ameter-dam-London service, cach carrying 980 lb . of mail. We are now building a new 12 -passenger type of 450 horsepower with an average speed of 110 miles an hour. Our new factory in Amsterdam can turn out 20 machines a month and employs 400 men."

Fokker is a firm believer in the future of commercial aviation and believes that rogular trans-Atlentic flights will be niade in the near future in perfect safety.

Saulnier: a French inventor, is ancther foreign aviation expert now in America. He is there in connection with a proposal for the construction of a plant there for the manufecture of his machines with American capital.

## U. S. TRUCKS FOR JAPANESE ARIMY

## Will Form Part of the Equipment of Motor Regiment

A shipment of 50 military motor cars, the crder for which was placed in America, has recently arrived at the motor car regiment stationed in Setagaya, in the suburbs of T'okio. These cars, which are of the Selden and Packard mather, are of the one and one-half and two ton types.

A Japanese representative of the two motor car comranies, quoted in the "Nichi Nichi" says that the condition of the doads in Jalan is such that they camot bear trucks with a carrying capacity of more than three tons. Contrasting the roads in the United States and Japan, the dealer wonders when the Japanese will awake to the importance of having good roads, from the viewpoint of civilian traffic and also national defence.


SHOWING a lorry chassis on final test with a $3 \frac{1}{2}$ ton load. Each chassis after being erected goes for a road test of several miles over country which gives excellent tests of the hill-climbing capacity of each machine, and also supplies natural hills for brake testing, etc.

2 and 3-4 Ton
CHASSES IN STOCK
We shall be pleased to demonstrate

# THECHINA GARAGECOMPANY 

Exclusive Agents for Central China
"Phone C. 2403

## TWO STROKE ENGINE INTRODUCED

## Valveless Unit Suitable for Small Cars Embodies New Piston Design

A



 the mentar of working pats is comedemally sedued as
 (1) Oto arele engine and its perfommee is (bamed to be equal to that of a high-ipeed wh-luh ricatines sterm nsine. From the results of tests made, this would appear to have been olveined.


Noecl assembly of thee pistons. two upper oncs being worting members and the tower one "pump)
The design is peculiar in that although only two work finge are employed, there are astually six distinet pistone in the engine. These are gromped tongether in eete of three. each sict being attached to a two-throw crankshait by a single connecting rod.

The arrangement of the eylinders is very umusual, and cam best be gathered from a description of the pistons. Two of thiese are of large diameter and each of them has two smaller pistons attached to its surface, the two bores in which the maller fistons work leing intercomested bs a common combution head, in which the paking plag and compresion tap ance vituated. In the wall of one of these smaller crlinders ane cut the inlet forts for the gals, and opposite, in the other celinder, are the exhatust ports

Thus, although thre are really fom-evinders the number of impulses lur revolution is the same an that abtained with a tro-crlinder two-stroke engine or a four(rlinder four-sitroke mit.

The flow of gas to lath combustion heads is controlled lix a single-piston valve, and the cecle of operation can be letter understood if only one pair of working eylinders is considered.

The lare lower piston with the other two attached to it is the charging fiston, and as it thaels downwards it draws a supply of mixture throbgh the valse from the (anhumetor. D) bing the mistroke the mixture is slighty compressed and delivered into a cavity which is cast round the inlet perts: in the erlinder walls. The pistons now trasel downwads as a result of the explosion, and the ex-
holl:t fort: in one of the pair of working cylinders are (perch, allowing the bernt gene, whish is at fairly high frambe, to get away. Tmmediately afterwards the inlet luat of chs, and allows frew slightly-compressed mixture (.) flu into che working eylinter, across the top of the colindy head, and down into the cthor cylinder, thus comI helely scavenging all the liurnt charge.

On this downward stroke the large charging piston has been put into communication with the carburetor by means of the piston ralve or distributor and a quantity of frech mixture is drawn in. Thas, two impulses per revolution are chtained fromi a two-crlinder unit.

The lener output of this small engine, which has a bore and stroke of 74 mm . by 90 mm , is in the neighbourhood of 14 b.h.p., and its smoothness should make it very suitable for car engines.

Sectional view of set-
up engine. Two im .
pulses are obtained. a recolation equalling a four cylinder, four
stroke unit


Tubrication is very complete, the charging pistons being oiled by splash from dipper troughs, and the oil film, instead of being burned above the pistons, as is usually the case, finds. it:: way with the transferred mixture to the working surface: of the two smaller pistons. White metal bearings are used throughout, and Record engines have been subjected to tests which included continuous running for six days and night: under full load. Besides being applicable to car work ther are claimed to be tery suitable for lighting and pmoning installations, and are to be fitted in a car whick, has been desigmed to the order of the Carey-Gavey Syndicate, Ltd.

## FORII RECORD PRODUCTION.

1)ming Octolier the Ford Notor Company produced ก9. 967 car: a new high record production for them. On October $26,4,648$ cars were manufactured at the rate of one every $18 \frac{1}{2}$ seconds. Officials estimate that the total productiun for the fiscal rear ending July 31, 1921, will amount to $1,250,000$ cars and trucks.


## Beauty and Unusual Power Distinguish the Nash Sedan

7 HIS luxurious seven-passenger car is perhaps the highest expression of the Nash ability to build fine automobiles.

Its graceful lines and the elegance of its every appoint ment are at once appreciated by those desiring a really handsome car for driving throughout the entire year.
And its Nash Perfected Valverin-Head motor makes it unusually powerful, quiet and economical of fuel.

You may own a NASH eventually-why not now. Call at our showroom and surprise yourself.

> 5-Passenger Touring Car, 2-Passenger Roadster,
> 4-Passenger Sport Model, 7-Passenger Touring Car, 4-Passenger Coupe, 7 -Passinger Sidun.

Sole Agents for China

## WAH CHANG

Main Office, 9 Ningpo Road

Branches and Agencies in all Important Cities of China and Abroad

## TRADING

## Corporation

## SHANGHAI

Showroom 4-5 Bubbling Well, Phone 5961


## ENGLAND HAS FIRST OILFIELD

Derbyshire Location, is Producing One Ton A Day<br>

Bubbling up from the same trata :3, bixit fo beton in a


 i) erpos shire.
sickly sulphur fimmes hatng remed the plater, and it is these fumes which, in their attempt to escaple from the
 boring, frem the heed of which the sil and gise freih up and then enter the smailer drain pipe.

This lowing is now yolding antomatially : ton : foil
 which is now neatly full. 'Ilte oil is state: to loe equal me quality to that produced from the lees Demmeysimise oilfields.

The boring is situated in Derbyshire on the left-hand side of the road between the villages of Hardstoft and Tibshelf'. Thongh it is noame 'Tibshelf, it is known at the Hardstoft Well, and as it may very likely assume historical importance there is some jealonsy amomget the inh hathitants of Tibshelf that the well has not been named after their parish.

The Hardstoft Well is the furst of ten borings to yiela oil. Situater? on the top of a hill, it was expeected that it Would be the fiast to produce oil. Other shalts are now being sunk at Heath, Brimington, Ridgeway, Fckingtom, and Honville (Nus. 1 and ! $)^{\text {) , in I Derlyshie, and at stake }}$ in Staffordshire (two shafts) and in Scotland (two shafts.) The concern which is carrying out the work is Messrs. S. Pearson and Son, Ltd., with which Lord Cowdray is prominently identified. Their local offices are in Chesterfield, which probably accounts for the name of Hardstoft being given to the first well, as it was there, on the way from Chestenfield that the first headynanters were made.

The other borings, at present unproductive, have been sunk to $4,000 \mathrm{ft}$., whereas the Hardstoft well draws its oil from a depth of $3,000 \mathrm{ft}$. Oprations were commenced there by a gang of American drillers on October 15th, 1918, the Marquis of Hartington, who lives close by at Hardwick Hall, whose statery prite orertows the boring, performing the opening ceremony. Eight months later, in May, 1919, the well first poduced oil, amd has lacen groducing exor since. It one time it was pumper uly, hat as the prmmse and shafting gave tronble they were removed. and the vil now rises atomatically hy the force of the gas.

The Americam drillers housed in a neat woden chanmpment close to the road, the works consisting of the boiler house, engine-room, derrick, and drilling tackle, all being enclosed in a barbed wire fence to keep atway the comions. crowds which thronged the place during the early operations. To deal with these inquisitive folk the drillers-

Inalian-lihn- jrainted a notice on the front gate, "Please Stus ont," and finther along son the outribe of one of the sheds mother notice-this time more brusque-bids the Wit p"hery. dut." 'These notices still stand, though the work sheds are practically deserted. At the present time the Haddal? well is goadea night and day ly a single flocimet. With oo lage in antumt of cil in the vicinity, and with the sulphur fumes continally coming away from the: Scant of the pipe, smoking is of ce. hise, forbiden, and ghand atio mombed for this reswon.
'Ihe Hads.tift well can be reached from the north by taking the lett-ham fork on loaving (hesterneld to the wouth, and then the right-lamel fork a few miles further on along the Harsisft and Tibshele read. The well is rituated on the lefi-hand cite of the road, ats it tises about one mile liom 'Tilwheli'.

Flom Drby and the sout! one takes the Ripley and Alfci(n had. teming shap to the right at the bottom of the long: alope a mile math of Alfreton for Tibehelf. At this point tum shapp to the left at the far end of the village. The well is then on the right of the road, about a mile fituther on.

## WHERE TIRES WEAR OUT

## Advice on Change That Will Benefit the Motorist

The fact that tires on the left hand side of a car wear out faster in proportion than those on the right hand side ofton luyzles motorists. The popular supposition that this Wear is cansed by tuming many comers to the left is incorrect. The fact is that the increased wear is actually, cansed hy the pitch of the road, which throws more of the car on the left side than on the right.

The round of the road from culb to curb is far more important in determining the sequence in: which tires nommally wear out-left rear, right rear, left front, right front-than is gutter wear and abrasions from grinding off and on pavements.

The shate of the rond caluses the left rear tire to carry nore weight than the right rear tire. Thus the left rear wears the faster of the two. The left front also will wear more rapidly than the right front, for the same reason.

However, as the right rear wheel receives a driving pull while the left front does not, it will wear the faster of the iwo. Under average conditions the left rear tire wears out first and the right front last.

To secure uniform wear from a set of tires, change them aromb ahout once a month. Particularly is it important to reverse the rear tires. After the rear tires are worn down, roverse them with the front.


[^54]
## (6) <br> MOTOR TRUCKS

G.M.C. 1 TON

Pneumatic Equipped
For Light Dispatch Service


## TRUCKS FOR

## G.M.C. $2^{\frac{1}{2}}$ TON

"America's Standard
All Purpose Truck"

Any type of body may be built to order
A new shipment of these

## THE SHANGHAI HORSE

## WHITE TRUCKS

WHITE 2 TON
Designed For
Quick Delivery Service

## EVERY PURPOSE

## WHITE $3 \frac{1}{2}$ TON


in our extensive body building works
Chassis has just arrived

## BAZAAR \& MOTOR Co., Ltd.

 ROAD, SHANGHAI
## WAH CHANG OPENS MOTOR DEPARTMENT

Latest Entry into China Motor Field Has Extensive Plans for Future


Firterion af Bublding Well showroom. Wiah Chang Tranting Corp

A striking addition, and one which indicates the future of the antomotire industry in the nation of ('hina, to the fiuld of the noter interests in Chima is that of the Whah (hang Thading (comonation, one of China's largest native imble and apont houes.

D. N. Koo, automotice
mentager. Wate C'hents

Trading Corp.

The W:ih chang Trading (orboration in its entirety is reprentative of the lest that is in young china in an industrial and business way. Founded only a few years ago, it has made rapid progress and is becoming one of the largset
firms of its nature in Central China. The firm is an outwowth of the Wall (hrlig Thimen and Smelting Company, China's largest producers of antimony, and is incorporated minder the laws of the State of New York. The staff of the corporation is largely oomposed of technical men, all native Chinese, who have recieved their educations abroad and have finished their work in the countries of the West by spending several years in arnlying their knowledge in the largest plants of their particular lines of specialization.

The entrance of the corporation into the automotive field is marked with this same idea of specialization. Before the motor department of the corporation was formed the services of D. N. Koo, a graduate of Purdue University, were ohtained-Mrr. Koo leecoming manager of the antomotive section of the company. Mr. Koo is a technical engineer of the lighest standard, serving as assistant reasearch engineer in the Prest-O-Tite factory at Indianapolis, and as a research cxpert for cix monthe with the Nash Motor Company at their plant at Kenosha, Wisconsin.

As a tempory measure the W'ah Chang organization has presid a moter sales and shomborm at 4 and 5 Bubbling Well Road, Shanghai, for the demonstration of the Nash motor car, for which it is the sole agent for China, and for automotive accessories. Within a short time the company will construct a modern garage and service plant to take


Interior view showing a part of new Wah Chang automotive showroom on Bubbling Well Road
care of their busmess．The salesroom was onened with a．formal reception on Jannary 15.

In connection with the sales，the company will maintain an expert tire and battery service，under the personal direc－ tion of Mr．Koo and will give attention to the ugkeep of the Nash cars cold by themselves．

## TICKETS FOR INDIANAPOLIS ON SALE

## World＇s Greatest Speed Event Attracting Increasing Attention Among Enthusiasts

Plans are being laid for the 5om－mile antomobile depts at tho Tndianapolis Motom Speodway，May 3 ，192 1.

Siarely at day bas pased sine the fimish of the olswid that orders for tichets have not been recoived．＇Tikk he wepe phaced om sale Jim．I，but all orders will 1 e fited and filled in the order of their receipt．
 being printed and will soon be peady for distribution．＇The mailing list of the a cedualy management is very latere．Thes

 will sexon lee written to．

It has taken six momthe of ste：dy charal work to shear



 present indications forecast another record brealing crowd．

As a begiming the motor dermiment of the ${ }^{*}$ ah（ ${ }^{\prime}$ han：－ Thading（orpation embolies the follwing amom tit． lines：Nask passenger cars and trucks；full line of Prest－O． Lite froducte，including eleatice lighting and atatims bereries and smilar modurts for motor：Miller tire ：（ibulo individual lighting cets，and a full line of accesson ies．

## BOILLOT JOINS SUNBEAM DRIVERS

## French Speeder Will Pilot English Made Raccis

Andre Boillor，the famond Fitemeh Pengend drime has joined the sumberm bekg depalment and will lio 1 the








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## PRICES AND SPECIFICATIONS OF AMERIGAN PASSENGER CARS






## 

## AI．T．E：

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AN
american

 APPLISON
$\therefore \quad \therefore 311.3$ Hemy Bijur $130 \quad 34 \times 4 \frac{1}{2}$ SS $3350+3550 \quad 3.500 \quad 4.500$ ARGONNE

AUBURN

## $4-3: 3 \frac{1}{5}$ Wismatn

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114 30xt Sis 4．500＋ 5700

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12．2さxt Remy Remy 142 34x4 $\frac{1}{2}$ SS 6500 ．．．．．．（650）
BELT 6－3坔 $\times 4 \frac{1}{3}$ Conn A．Lite $120 \quad 33 x+$ sis ．．．．．． 2150
BIDDLE ${ }^{4-33_{1}^{3} \times+\frac{1}{4}}$ A Kent A－Lite $114 \quad 31 \times 4 \quad$ SS $41495 \quad 1495$

BOUR－DAVIS
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CLEVELAND
$6 \cdot 3 x+\frac{1}{3}$ G\＆D
$\begin{array}{lllll}\text { GidD } & 112 & 32 \mathrm{x} 4 & S S+133.5 & 1335\end{array}$
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COMET
C－5：3 6－3．3x57 Wiagner Wagner $125 \quad 32 \mathrm{x} 4 \mathrm{SS}$ ．．．．．．23．
COMMONWEALTH
$\begin{array}{llllllll}4-40 & 4-3 \frac{1}{2} \times 5 & \text { A．Kent Dyneto } 117 & 32 \times 4 & \text { SS } & \ldots . . & 1595 & +1785 \\ 2465\end{array}$
4－40 $4-3 \frac{1}{2} x$
CRAIG－HUNT
CROW－ELKHART
$103 \quad \ldots \ldots . \quad$ ．．． $1000 \quad 1000$
I．－5．） $4-3 \frac{1}{2} \times 5$ Com Dyneto $111 \quad 32 \times 3 \frac{1}{2}$ SS $+1195 \quad 1195+13451995$ $\begin{array}{lllllllll}\mathrm{H}-5.5 & 6.3 \frac{1}{2} \times 5 & \text { Conn } & \text { Dyneto } 117 & 33 \times 4 & \mathrm{SS} & +1445 & 1445 & +1495 \\ 2195\end{array}$
CTNNINGHAM
（\％）\＆\＆－33x．Delco Wsths $132 \quad 35 \times 5$ SS +6250 ＊6250 6250 CICLOMOBILE

DAVIS
$5166.3 \frac{1}{4} \times 4 \frac{1}{2}$ Delco Delco $120 \quad 33 \times \frac{1}{2}$ SS ．．．．．． 2185 te23．50 318.5
$\begin{array}{lcccccccc}\text { G } & 4-3.3 \times 5 & \text { Bosch } & L S L & 120 & 34 x \pm & S S & 1290 & 13.50 \\ 1: 350\end{array}$
DIXIE FLYER
$+3 \frac{1}{4} \times 5$ Com
Dyneto 112 32x4 SS $1595 \quad 1595$ ．．．．．． 2570
DODGE BROTHERS
6－80 $4-3 \frac{1}{3} \times 4 \frac{1}{2}$ N．E．Li．E． $114 \quad 32 \times 3 \frac{1}{2}$ SS $123.5 \quad 124.5 \quad . . .$.

| DORRIS |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $6-80$ | $6-4$ | $\times 5$ | Bosch Withz | 132 | 33 x 5 | SS | $\ldots .$. | 14.50 | 4750 |

DOR＇T
Dupont
$4-3 \frac{1}{16} \times 5 \frac{1}{8}$ Eisman Wisths $12 \pm$ 32x $\frac{1}{2}$ SS ．．．．．． 14000


ECONOMY
 ELCAR


f．K $K-3!x+1$ Wagner Wragner 118 33xt QD $\ldots \ldots$. ESSEX
FERRIS $4-33_{3}^{3} \mathrm{x} \cdot \mathrm{y}$ Deleo Delco $10 \times \frac{1}{2} 32 \mathrm{x} 4$ S．S 159．5 1595

2450

$\begin{array}{lllllllll}\text { T1920 } & \text { With Electric Starter）} \\ \text { 1．33xt Ford } & \text { Own } & 100 & 30 \times 3 \frac{1}{2} \mathrm{C} & \mathrm{C} & 465 & 510 & \ldots . . & 795\end{array}$
 GAR GNER

6－40 6－3！x．5 Wrath Wisthe 119 32x4 $\mathrm{SS}+1695 \quad 1695$
GRANT


202
$4.3!x+1$
4
HANDLEYKNIGHT
－A－Lite 125 32x $\frac{1}{2}$ SS 2985
$54 \quad\left(6-3 \frac{1}{4} \times 4\right.$ Delco Delco $121 \quad 32 \times 4$ SS $2365 \quad 2365$ ．．．．．． 2885 HARROUN

A－1 $4-31 \times 5 \frac{1}{\frac{1}{2}}$ A．kent Remy $10630 \times 3 \frac{1}{2} \ldots+1095 \quad 995$ HATFIELD
HAYNES ${ }^{4-3 \frac{1}{4} \times 5}$ Conn Drneto $115 \quad 32 \times 4 \quad$ SS $\ldots \ldots$.
$4.5 \quad 6-3 \frac{1}{2} x 5$ KingstonL－N $\quad 132 \quad 34 \times 4 \frac{1}{2} \mathrm{SS}+3185$
$4612 \cdot 2+\mathrm{x} 5 \mathrm{~J}$ Delco $\mathrm{L}-\mathrm{N} \quad 132 \quad 34 \mathrm{x} 4 \frac{1}{2} \mathrm{SS} \quad \ldots . .+3450$ HOLLIER
206－B 6－31 $54 \frac{1}{2}$ Remy Wisths 120 33x4 SS +19851985
HOLMES
$\begin{array}{llllllll}1 & 6 \cdot 3 \cdot \frac{1}{2} x+\frac{1}{4} & \text { Holmes DJneto } & 126 & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots . . & +3050 \\ H & 3100 & 4000\end{array}$


$\begin{array}{llllllll}\text { R－3 } 3 & 4-3 \frac{1}{2} x 5_{2}^{\frac{1}{2}} \text { A．Kent Wsths } & 112 & 32 x 4 & \text { SS } 1760 & 1760 & \ldots . . & 2600\end{array}$ 6－31．1×4 $\frac{1}{2}$ Remy A－Lite 121 33x4 SS ．．．．．． $2150+2885 \quad 3650$ $\begin{array}{lllllllll}6-28 & 6-3 \frac{1}{2} x 5 \frac{1}{4} & \text { A－Lite A－Lite } & 126 & 34 \times 4 & \text { QD } & 2750 & 2750 & 2750\end{array}$ JORDAN
 M $6-3 \frac{1}{4} \mathrm{x} 4 \frac{1}{2}$ Delco Deleo $120 \quad 32 x t$ SS 2650
6－35 $\mathrm{x} 4_{4}^{1}$ A．Kent Bijur 116 ．．．．．．．．． $1750 \quad 1800$ ．．．．．． 2700
$\begin{array}{llllllllll}\text { KING } \\ \text { H } & \text { S－3 } & \text { A．Fent Wisths } & 120 & 32 x 4 \frac{7}{2} & \text { SS } & 2750 & +2735 & 2725 & 4235\end{array}$ KISSEL KAR
$\begin{array}{lllllllll} & 124 & 32 x+\frac{1}{3} & \text { SS } & 3475 & +3475 & 3475 & 13975\end{array}$
KLINE
 LAFAYETTE
LEACH $8.3{ }_{4}^{1} \mathrm{x} 5 \mathrm{~T}^{\frac{1}{2}}$ Delco Delco 132 33x5 SS $5625 \quad 5625$ ．．．．． 7400
$\begin{array}{rlllllll}6-3 & 1.5 \\ 1\end{array}$
S $\quad 6-33^{2} \times \frac{1}{2}$ Comn GdD 120 32x $\frac{1}{2} \quad$ SS $\ldots \ldots$. LIBERTY
LINCOLN $\quad 6-3 \frac{1}{4} \times 4 \frac{1}{2}$ A．Kent Winmer 117 32x4 $\quad$ SS $1795 \quad 1795+1835 \quad 2850$ $\begin{array}{lllllllll}\text { A．} 3 \text { 3．s．} \\ \text { Delco Delco } & 130 & 33 \times 5 & \mathrm{SS} & +4500 & 4600 & 4600 & 6000\end{array}$ LOCOMOBILE
$48 \quad 6-4 \frac{1}{2} \times 5 \frac{1}{2}$ Berling Wsths $142 \quad 35 \times 5 \quad$ SS +7650
755010000 LORRAINE

$\begin{array}{lllllllllll}127 & 6-4 \frac{1}{2} \times 6 & \text { Wsths Wsths } & 140 & 35 \times 5 & \text { SS } & 5300 & +5100 & 5100 & 6400\end{array}$ MADISON
MAIBOHM $6-3 \frac{1}{5} x \mathrm{~A}^{2}$ A．Kent Remy 115 33x4 SS ．．．．．． 1550
B 6－35さ烓A．Keut Bijul 116 32xi SS 14751475 ．．．．．． 2235

| Model | Motor | Ignition |  | ng w | B Tires | Rims | ms Pass | $\begin{gathered} 5- \\ \text { Pass. } \end{gathered}$ | $\begin{gathered} 7- \\ \text { Pass. } \end{gathered}$ | Sedan | Model | Motor | Ignition | $\text { n } \stackrel{\text { Starti }}{\text { Light }}$ | ng WB | Tires | Ri | $\underset{\text { Pass }}{2-}$ | $\begin{aligned} & \text { Pass. } \\ & \hline 5- \\ & \hline \end{aligned}$ | $\begin{aligned} & 7 . \\ & \text { Pass. } \end{aligned}$ | Seden |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MAN | XAL |  |  |  |  |  |  |  |  |  | PILOT |  |  |  |  |  |  |  |  |  |  |
|  | $2-3 \frac{1}{2} \times 3$ | 5 A. Ken | nt | 102 | 28x3 | C | \$475 |  |  | ...... | $6-45$ <br> PORTE | $6 \cdot 3 \frac{1}{8} \times 5$ | Delco | Delco | 120 | $32 \times 4$ | SS | +\$1940 | \$1895 |  | 32900 |
|  | 6-3345 5 | $\frac{1}{8}$ Delco | Delco | 136 | 32x4 | SS | †5000 | \$5000 | \$5000 | \$6600 |  | 4-4.6x6 | Berling | g Wst | 1 | 35x | SS |  | +9200 | \$9400 |  |
| MAX | ELL |  |  |  |  |  |  |  |  |  | PREMI | ER |  |  |  |  |  |  | +8200 | \$400 |  |
| 25 | $4-3{ }_{8}^{5} \times 4$ | $\frac{7}{2}$ A.Kent | Stimms | s 109 | $930 \times 3$ | C | 995 | 5995 |  | 1695 | ${ }^{6-D}$ | 6-33x57 | Delco | Delco | 127 |  | SS | 4600 | +4600 | 4600 | 5800 |
| MERCE | ER |  |  |  |  |  |  |  |  |  | R \& V-K | NIGHT |  |  |  |  |  |  | +4600 | 460 | 5800 |
| 5 | 4 4 -3 ${ }^{3} \times 6$ 3 | ${ }^{3}$ Berling | g Wsths | 132 | $232 \times 4$ | SS | 3950 | $\dagger 3950$ | * 3950 |  | R | 4-3 ${ }^{3} \times 5$ | Wagne | er Wag | (115 |  |  |  | 2150 |  | 2900 |
| METZ |  |  |  |  |  |  |  |  |  |  | $\underset{\text { REO }}{\text { J }}$ | 6-3 3 2 $\times 4 \frac{1}{2}$ | Wagn | Wag | r 127 |  |  | 3350 | +3350 | 3350 | 4000 |
| Master. <br> MITCH | $66 \cdot 3 \frac{1}{8} \times 5$ IELL | Conn | Wsths | 12 | $032 \times 4$ | SS | $\ddagger 1995$ | 1995 | ...... | 2895 | $\begin{aligned} & \text { REO } \\ & 1920 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| E 40 | C-37x5 | Remy | Remy | 120 | 33x4 | SS | $\ddagger 1750$ | 1750 | .... | 2900 | REVER | E | N. E. |  | 120 | 33x4 | SS |  | 1850 |  | 2850 |
| E-42 | ${ }^{6-3 \frac{1}{2} \times 5}$ | Remy | Remy | 127 | $34 \times 4$ | SS |  |  |  |  | A | $4-4 \frac{3}{8} x$ | Bosch | Wsths | 131 | 32 x | SS | 48.50 | 4650 | +46j0 | 6500 |
| MOLLE | $\mathrm{ER}_{4-23 \mathrm{x}}$ | Eisman | Dyne | 100 | 28x3 |  | 1100 | $\dagger 1150$ |  |  | $\begin{aligned} & \text { ROAME } \\ & \text { C-6-54 } \end{aligned}$ | 6-3 | Bos |  | 128 |  | SS |  |  |  |  |
| MONIT | OR |  |  |  |  |  |  |  |  |  | SAXON |  |  |  | 12 |  | SS | 3175 | 3075 | 3325 |  |
|  | $6-3 \times 4 \frac{1}{2}$ | Dyneto |  | 121 | $33 \times 4$ |  | 2475 | 2475 | 3475 |  | SAYERS | $4-3$ | Remy | Wag | 112 | $32 \times 3$ | SS |  | 1785 |  | 385 |
| $\because 9$ | $4.31 \times 4$ | onn | A-Lite | 115 | $32 \times 3$ | SS | 1440 | 1440 |  |  | SIX-42 | 6-31 $\times 4$ 4 ${ }^{\frac{7}{2}}$ | Delco | Delco | 118 | 33 x | SS | 2195 | 2195 |  | 3295 |
| MOON |  |  |  |  |  |  |  |  |  |  | SCRIPPS | S-800 |  |  |  | 30x | SS | 219 | , |  | 3295 |
| 6-48 | $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ | Delco | Delco | 118 | $32 \times 4$ | SS | 2085 | 1985 |  | 2985 | B-39 | $6-2 \frac{13}{13} \times 4 \times$ | Remy | Remy | 115 | 32x4 | SS | +1545 | 1545 | .،.... | 2295 |
| 6-68 | 6-32 $\times 5$ | Delco | Delco | 122 | $35 \times 5$ | SS | 2585 |  | 2485 | 3485 | SENECA | 4-31 $\times 4 \frac{1}{2}$ | Conn | A. C. | 108 | 30x | C | 1185 | 1185 |  |  |
| MOORE | $4 \cdot 3 \times 5$ | Conn | A-Lite | 108 |  | QD |  |  |  |  | SEVERI |  | Wa | A. | 108 | 30x | C | 1185 | 1185 |  |  |
| NASH |  |  | -Lite | 108 |  | QD |  |  |  |  |  | $\begin{aligned} & 6-3 \frac{1}{2} \times 5 \times 5 \text { 昷 } \end{aligned}$ | Wagne | Wagn | 122 | $32 \times 4$ |  |  | 2550 |  |  |
| $\begin{aligned} & 681 \\ & \text { NASH } \end{aligned}$ | 6-33455 | Delco | Wagner | r 121 | $33 \times 4$ | SS | 1695 | 1695 | 1875 | 2895 |  | $4-31 \frac{1}{6} \times 5 \frac{1}{1}$ | Remy | A.Lite | 116 | $33 \times 4$ | SS | 1800 | 1800 |  |  |
| NATION | $4 \cdot 34 \times 5$ <br> NAL | Willard | Wagner | r 112 | $32 \times 3 \frac{3}{2}$ |  | 1395 | 1395 |  |  | $\begin{aligned} & 20 \\ & \text { SKELTO } \end{aligned}$ | $6-4 \times 5 \frac{1}{2}$ | Bosch | Wsths | 138 | $33 \times 5$ | SS |  | †5800 | 5800 | 7800 |
| Sextet | $6-3 \frac{1}{2} \times 5 \frac{1}{4}$ | elco | Wsths | 30 | $32 \times 4 \frac{1}{2}$ | SS | 3750 | +3750 | 3750 | 4950 |  | 4-3 $3^{\frac{3}{2} \times 5}$ | Conn | Wsths | 112 | $32 \times 3$ 2 | SS | 1295 | 1295 | $\ldots$ |  |
|  | 4-3188943 | Bosch | U.S.L. | 104 | 32x4 | SS |  | 1700 |  |  |  |  |  |  | 90 |  |  |  |  |  |  |
| NOMA |  |  |  |  |  |  |  |  |  |  | STANDA | ARD |  |  |  | $28 \times$ |  | 295 |  |  |  |
| $\begin{aligned} & \text { I } \\ & \text { NORWA } \end{aligned}$ | $\text { ALK }^{6-34 \times 4 \frac{1}{2}}$ |  | Delco | 128 | $31 \times 4$ | SS | 2800 | +2900 | ...... |  |  | 8-31 5 5 | A.Kent | Wsths | 127 | $34 \times 4$ | SS |  | $\dagger 3400$ | 3400 | 000 |
|  | 4-312 $\times 5 \frac{1}{2}$ | Delco | Dyneto | 116 | $32 \times 3 \frac{1}{2}$ | SS |  | 1385 |  |  | STANLE |  |  |  |  |  |  |  |  |  |  |
| OAKLA | ND ${ }^{2}$ |  |  |  |  |  |  |  |  |  | Steame | 2-4×5 |  |  | 130 | $34 \times 4$ | SS | ...... | 3950 |  | 6100 |
| 34-C | 6-21384 ${ }^{3}$ | Remy | Remy | 115 | $32 \times 4$ | SS | †1395 | 1395 |  | 2065 | STaNWOO | OOD |  |  |  |  |  |  |  |  |  |
| OLDSMO | OBILE |  |  |  |  |  |  |  |  |  |  | 5-3 $3 \times 4 \frac{1}{2}$ | lliurd | A.Kent | 118 | $33 \times 4$ | SS |  | 2050 |  |  |
| 45-B | 8-27844 ${ }^{3}$ | Delco | Delco | 122 | $33 \times 4 \frac{1}{2}$ | SS |  | $\dagger 2045$ | 2045 | 2950 | STEARN |  |  |  |  |  |  |  |  |  |  |
| 37-A | $6-213 \times 4 \frac{3}{6}$ | Remy | Remy | 112 | 32x4 | SS | 1450 | 1450 | ...... | 2145 | SKL4 | $4.33 \times 55_{8}^{5}$ | A.Kent | Wsths | 125 | $34 \times 4 \frac{1}{2}$ | SS | $\ddagger 2475$ | 2450 | 2675 | 3450 |
|  |  | Conn | A-Lite | 116 |  | . |  | 1585 |  |  | STEPHE | NS |  |  |  |  |  |  |  |  |  |
| OVERL | AND | Conn | A-Lite | 116 |  | - |  | 1585 |  |  | Salient Six | $\times$ 6-3 $3 \times 4 \frac{1}{2}$ | A-Lite | A-Lite | 122 | $33 \times 4 \frac{1}{2}$ | SS | 2400 | $\dagger 2400$ | *2400 | 3400 |
| 4 | 4-3384 | A-Li | A-Lite | 100 | 30x3 | QD | 895 | 895 |  | 1485 | SILT EN |  |  |  |  |  |  |  |  |  |  |
| OWEN-M | MAGNET |  |  |  |  |  |  |  |  |  |  | 9-7 $\frac{7}{16} \times 4 \frac{1}{2}$ |  |  |  |  |  |  |  |  |  |
| W-42 | 6-4 x $5 \frac{1}{2}$ | Bosch | Own | 142 | $35 \times 5$ | SS |  |  | 7000 | 7500 | STUDEB | AKER |  |  |  |  |  |  |  |  |  |
| PACKAR | RD |  |  |  |  |  |  |  |  |  | Light-6 | 6-31 $\times$ ¢ $4 \frac{1}{2}$ | Wagner | Wagner | 113 | 32x 4 | SS | 1485 | ...... |  | 2450 |
| 3-35 |  |  |  | \{136 | $35 \times 5$ | SS |  |  | 6000 |  | Spec. -6 | 6-31 $\times 5$ | Wagner | Wagner | 119 | $32 \times 4$ | SS | 1750 | 1750 | $\dagger 1750$ | 2650 |
| 3-25 1 | $12-3 \times 5$ | Delco | Bijur | \{128 | $35 \times 5$ | SS | +5200 | 5200 | 5250 |  | Big-6 | 6-388 $\times 5$ | Witguer | Wagner | 126 | $33 \times 4 \frac{1}{2}$ | SH |  |  | 2150 | 2450 |
| PACKAR | RD |  |  |  |  |  |  |  |  |  | STUTZ |  | Delco |  | $\{130$ | $32 \times 4$ | SS | 3900 | :4000 | 3400 |  |
| New-6 <br> PAIGE | $6-3 \frac{3}{8} \times 4 \frac{1}{2}$ | Delco A | Kent | 116 | $33 \times 4 \frac{1}{2}$ | .. | 2975 | 2975 | ...... | 4250 | $\underset{\text { Trypi }}{\text { H }}$ |  | Delco | Remy |  |  |  |  |  |  |  |
| 6.42 | 6-3188 $\times 5$ | A.Kent | G\&D | 119 | $33 \times 4$ | SS | \$1770 | 1770 | ..... | 2645 |  |  |  |  | 118 | 32 x | SS |  |  |  |  |
| 6-55 | 6-31 $\times 5$ | A.Kent | G\&D | 127 | $33 \times 4 \frac{1}{2}$ | SS |  | 2895 | 2895 | 3750 | VELIE |  |  |  |  |  |  |  |  |  |  |
| PARAGO |  |  |  |  |  |  |  |  |  |  | 48 | $6 \cdot 3 \frac{1}{4} \times 4 \frac{1}{2}$ | Bijur | Bijur | 115 | 32x4 | SS | 1885 | 1885 | ....... | 2650 |
| PAREN'I | 4-3 | ...... |  | 122 |  | SS | 3000 |  |  |  | 34 | $6-3 \frac{1}{5} \times 4 \frac{1}{1}$ | A.Kient | Wsthe | 112 | $32 \times 3 \frac{1}{2}$ |  |  | 1385 |  |  |
|  | $6-3 \times 4 \frac{1}{2}$ | Conn | Bijur | 123 | $32 \times 1$ |  |  | 2000 |  | 3000 | W Estcot | TT |  |  |  |  |  |  |  |  |  |
| PATERSO | ON |  |  |  |  |  |  |  |  |  | C-48 | $6-3 \frac{2}{2} 5$ | Delco | Delco | 118 | $32 \times 4.4$ | SS | \%,90 | 2990 | 2990 | 4590 |
| 6-50 | 6-31 $\times 4 \frac{1}{2}$ | Willard | Delco | 120 | $33 \times 4$ | SS |  | 2100 |  | 3300 | C-38 WILLYS- | KNIGI | $\begin{aligned} & \text { Delco } \\ & \text { IT1 } \end{aligned}$ | Delco | 118 | 33 x 1 | HS | 2290 | $\underline{2} 290$ |  | 3380 |
| P6ERLE |  | A.Kent | A-Lite | 125 | $34 \times 47$ | SS |  | 3200 | 3230 | 4140 | WILLYS- $20$ | -KNIGT1 | IT | A-Lite | 118 | 33x 4 | SS | 2193 | 2195 | ... | 2945 |
| ${ }^{56} \mathrm{PIEDMO}^{8}$ | ONT |  |  |  |  |  |  |  |  |  | WINTIL |  |  |  |  |  |  |  |  |  |  |
| 6-40 | $34 \times 4 \frac{1}{2}$ | Remy | Remy | 122 | $32 \times 4$ | SS | ..... | 1945 |  |  | 61 | $5-31 \times 7$ | Wstis | W. ${ }^{\text {sthes }}$ | 120 | $33 \times 4$ | SS | ...... | 2500 | $\ldots$ |  |
| 4-30 | ¢ $\frac{1}{2} \times 5$ | Delco | Dyneto | 116 | $22 \times 3 \frac{1}{2}$ | SS |  | 1485 |  |  | WINTON |  |  |  |  |  |  |  |  |  |  |
| PIERCE- | -ARROW |  |  |  |  |  |  |  |  |  | $2 \cdot$ | (6-3345] | Bosch | 13 j ¢ | 132 | 3 x 5 | SS | $\ldots$ | $\ldots$ | 4550 | 6200 |
| 48 | 6-412x $5 \frac{1}{2}$ | Delcs | Wsths | 142 | $35 \times 5$ | QD | 7650 | 7650 | 7750 | 9250 | WIZARD |  |  |  |  |  |  |  |  |  |  |
| 38 | $6-4 \times 5 \frac{1}{2}$ | Delco | Wsths | 134 | $34 \times 4 \frac{1}{2}$ | SS + | 7250 | 7250 | 7250 | 85.0 |  | $2.15 \mathrm{~h}, \mathrm{p}$. | ...... | A.kent | 100 | 30x:3 | C | 39. | ..... | .... |  |

[^55]HAUL BY TRUCK

## BRITISH MOTOR SPECIFICATIONS AND PRICES.

Prices have remained stable for the most part with the opening of the new year. This list is compiled as of January 10, from the latest information, and contains a few changes since the December issue. The term chassis when used includes complete equipment less only the coachwork. No uniform equipment is quoted by the various manufacturers. In many instances self-starters are extra. The numerals connected by the sign $x$ are cylinder dimensions in centimeters.


NAPIER. 6-cyl. $102 \times 12740-50 \mathrm{~h} . \mathrm{p}$. Chassis... ... £2,100 6 -seater Touring 2,625
NEWEY. 4 -cyl. $69 \times 120$ 12-15 h.p. Chassis ... ... 600 4 -seater Touring 800 NEW ORLEANS. 4 -cyl. $76 \times 16520$ h.p. Chassis. 4 -seater Touring
NEWTON. 4 -cyl. $69 \times 14012$ h.p. Chassis 4 -seater Touring ... ORPINGTON. $4^{\circ}$-cyl. $10-12$ h.p. Chassis
PALLADIUM. 2-cyl. $89 \times 10710$ h.p. 4 -seater Touring PARNACOTT. 2 -cyl. $98 \times 9812$-20 h.p. 2 -seater PERFEX. 22.5 Chassis ...

## 2 -seater ...

4-seater ... $\qquad$
... ..
.

PHENIX. 4 -cyl. $69 \times 10011.9 \mathrm{~h} . \mathrm{p}$. Chassis 3 -seater
RICHARDSON. 2 -cyl. $85 \times 858$ - 10 h.p. 2 -seater
RILEY. 4-cyl. $65.8 \times 11011 \mathrm{~h} . \mathrm{p}$. Chassis 2 -seater 4 -seater Touring...
ROLLS-ROYCE. 6-cyl. $114 \times 12140-50$ h.p. Chassis... Complete 2,600 to 2,800
ROVER. 4 -cyl. $75 . x 13012$ h.p. Chassis

|  | 2 -seater | $\cdots$ | $\cdots$ |
| :--- | :--- | :--- | :--- |
|  | $\cdots$ | $\cdots$ | 735 |

5-seater Touring ... 775
ROVER, Light Model. 2-cyl. 8 h.p. 2 -seater .
RUSTON-HORNSBY. 4 -cyl. $80 \times 13016-20$ h.p. Chassis 5 -seater Touring
SEABROOK. 4 -cyl, $69 \times 120$ 11.9. h.p.
2-seater Appx.... 700
SINGER. 4 -cyl. $63 \times 8810$ h.p. 2-seater ... ... 500
Coupé... ... ... 610
SIZAIRE-BERWICK. 4 -cyl. $95 \times 16025$-50 h.p.
5 -seater Touring...
1,600
STAFFORD. 4 -cyl, $69 \times 12011.9$ h.p. Chassis
4 -seater Touring
STANDARD. 4-cyl. $62 \times 11011.6$ h.p. Chassis
… 525
4 -seater ... 645
STAR 4 -cyl $80 \times 150-15.9$ hp Cis
2 -seater
5 -seater Touring
4 -cyl. 20.1 h.p. Chassis
5 -seater Touring $\quad$... $\quad$... $\quad 1,065$

4 -seater Touring 1,650

## THIS "LITTLE BIRD" CAN FLY



The winner of the Itulian government pri:e fur the smallest flying plane. The wing sprearl is $1: 3$ fert, and the lengthe is 15 feet, 6 inches. Its speed is 106 miles an hour

## HIGHER FEES FOR ONTARIO

## Canadian Province Raises Licenses According to Number of Cylinders

Increased license fees will be charged owners of motor cars in Ontario by the Department of Public Works this year, when Hon. F. C. Biggs, Minister of Public Works, bopes to increase the revenue of the province from this source by $\$ 750,000$ according to a recent Toronto report. The revenue in 1919 amounted to more than $\$ 2,000,000$. "As the automabiles use the roads the most," Hon. Mr. Biggs said, "we feel that they should pay their share of the cost of the highways."

The number of cylinders in automobile engines is taken into account in the new licenses, which was never done before. The fee for passenger cars of 25 hp . or less will be from $\$ 13$ to $\$ 20$. The present fee is $\$ 10$. For passenger cars of 25 to 35 hp . the fee $\pi$ ill range from $\$ 1.5$ to $\$ 3.5$. The present fee is $\$ 15$. Cars of 50 hp . or over will pay from $\$ 30$ to $\$ 40$. The present fee is $\$ 30$. The smallest motor truck, which now pays $\$ 10$, will be $\$ 13$. Trailers, which at present pay nothing, will be charged from $\$ 2$ to $\$ 5$.

## SCHROEDER INTO MANUFACTURING

## Famous Air Pilot Will Market Flowmeter, Own Invention

Captain R. W. Schroeder, of the air service, noted as holder of the world's altitude record for airplanes and pilot of the American Air Service Entry in the Gordon-Bennett airplane race, has been discharged from the army.

Captain Schroeder will enter inito the manufacture of the Schroeder Flowmeter perfected by him while at McCook Field, Dayton. He will be associated with a manufacturing concern in Chicago which has undertaken the development and marketing of his device.

## AIR CURRENTS

An air service between Tiondon and Amsterdam is being contenplated. according to recont London advices, and may be inaugurated in the spring. The route will include Gormany, Denmark and Sweden. It is planned to employ it theit of Fekkur monoplanes of wooden wing construction 1, wilt at the Eokier Company's works at Amsterdam. Each mathin: will l.. camable of carrying seven passengers.

Chen Yi-ku, a Changchow merchant of Shanghai, is said to be organizing an airplane company with the aid of "ral Americen aviaters, according to the Chinese press. The compeny plans to eperate both a land and marine selvice for the transprtation of express, mail and passengers. The company is incorporated under American law. The first service planned is from Shanghai to Wcosurg.

Cnited States Naval seaplane, the N. C. H., carrying a pilot and five passengers recently made a flight along the Mexican coast from San Diego to Magdalena Bay, a distance of 702 miles, in nine hours and filteen minutes.

A Sino-Japanese air service is being contemplated, according to the Chinese press. The promoters are Japanese and Chinese aviators from the government schools in Tokio. It is stated that the frip from Shanghai to Tokio can be made in nine hours.

Lieut. Ferrarin and Lieut. Masiero, of the Royal Italian Flying Corps, who made the successiful flight from Rome to Tokio last year are reported by the press to be preparing for a second trip over the same circuit. While certain stops will be made, it is expected that the trip will be made within a week's time. No definite date has yet been set for the start.
C. Wood and Deng Chi, two representatives of the Aeronautical Department of the Chinese government, have returnod from England where they have been investigating aircraft and aircraft manufacturing. Mr. Wood expects to return to England next spring.

The United States War Department has announced that Army aviators will make an attempt to fly across the United States from Florida to California and vice versa, on Wrashington's Binthdar, February 22. It is proposed that one plane will fly from Jacksonville to San Diego and another from San Deigo to Jacksonville. It is expected that the entire distance of 2,079 miles will be traversed in twenty-four bours, with two intermediate stops at Houston and El Paso, Texas.

Seventeen German machines were recently received in Japani as a part of the reparation in munitions to be made to the latter country under the Treaty of Versailles. Severa! of the machines are of the latest four passenger type.


CITROEN ACHIEVEMENT-Two stock cars on Jany. 8 was run from Tientsin to Peking in 5 hours, 35 minutes running time, and used only $3 \frac{1}{2}$ gal. gasoline per car. The return trip next day was made on 3 gal. per car. Recently at Le Mans a Citroen won first prize making 100 km . on 5 Litres.

A new shipment of these economical cars in Touring Models have just arrived. All models are fully equipped, including Electric Starting and Lighting.

DE DION BOUTON 10 H.P. Chassis, the first to arrive in China, is now on demonstration.

We are also showing a magnificent-TALBO'I-DARRACQ 14 II.P. CHASNIS.

New ${ }_{\text {MATM }}$ MIS, 8-10 H.P. Chassis
VELIE 6-cylinder Touring
RENAULT 3-TON_Trucks
Also full line KISSEL Cars, g-Pass. 'Touring, L-Pass, Sport and Roadsters. MICHELIN TIRES in Cords and Fabrics-Straight Side and Clincher Types.

For further particulars apply to Mr. Philippe Osterberger

## GRAND GARAGE FRANCAIS

Phone C. 2781

# GOOD ROADS MOVEMENT WORLD.WIDE 

America, Europe and Asia all Joining Better Highways League

The determination of fom ward lokkin: combtrie: in both hemispheres to procure for themselves the advantages actuing frem implowed highwes is sen in the greal sumb heing aptopriated for this pupese ly mational, stats and local governments.

The United States of America has, through the Federal Congress, made available more than one hundred million dollars for read building in the combent rear, with the prowisu that en equal amount be expended by the individual states. In addition there are a number of special funds suth as those to be spent solely on post roads and roads in the mational forest reserves and also the millisus of dollars received in taxes from motor calr owners. The tutal sum that will be available for road building in the United States during 1921 will amount to at least $\$ 600,000,000$.

One of the roads to be built in the Crinted States is: the Jackson Highway, a great national path from Buffalo on the Great Lakes to New Orleans on the Gulf of Mexico. This will be the first north and south transcontinental road to be completed into the Gulf City. The Lincoln Highway, stretching from New York on the Atlantic to San Francisco on the Pacific is now practically completed, although certain parts require attention before it can be said to provide smooth going the full distance.

But the really significant expenditures for good roads, are those made by direct vote of the people themselves who agree to pay in taxation, for the work which will ultimately result in great savings to them. The State of California has recently passed a bill to issue $\$ 40,000,000$ in bonds for funds to make the California highway system the finest in the country. This amount makes a total of $\$ 80,000,000$ worth of state bonds floated there in the last eight years. For a population of only three million to assume such a great sum shows how eager the people are to secure the benefit of the best possible highways. Business men and citizens of all classes vied with each other in stimulating interest in this bond issue, because they have found how shipping rates fall when motor transport is brought into use on favorable roads.

In other countries the trend toward rad improvement is equally marked. Argentina is building macadam roads from the interior to her principal ports, permitting the export of much produce that would otherwise never leave the farms and ranches, for lack of rapid traneportation. Brazil is building good highwars to connect its largest cities in those states most engaged in commerce. A 25 mile road suitable for motoring is being built from Rio de Janeiro to Petropolis. The state of Ninas Gereas has 372 miles of good roads and is building 900 miles more. Bolivia is extending its highway systems and has subsidized five motor
transort lines to seme on the principal routes from the perts to the interior. (hile has 21,000 miles of roads, including trails. The Chilean Congress is proposing to raise money by taxation in order that the Federal Government may contribute to the funds expended by the local authorities in road construction. A 98 foot wide highway
 to cost $2,500,000$ Pescis. A toll will be levied on all motor cars using this special speedway. Chile realizes that only peor reads frevent her from having the transportation of goods by metor truck that would cut costs and enlarge the rural food producing population.

Anstralia is arranging to borrow and spend $£ 2,000,000$. over a pericd of five years, for the constriction of main roads. $€, 500$ miles of highways have been taken over by the state board. Another roads act provides an additional half million pounds to be spent in five years. The State of Victoria is building a great ocean boulevard, 125 miles long, from Warrnambool to Geelong, as a permanent memorial to the Victorians who fell in the Great War.

In Belgium, the Ninistry of Public Works will commence a vast program of road improvement, remaking, at a cost of sixty million francs, a net work of roads to connect Brussels with all important towns, and will afford communication with tourists' resorts, the principal devastated districts and the famous battle fields of Flanders.

Cuba and the islands of the West Indies are improving their highways. Cuba alone has 1,250 miles of good roads to which it is constantly adding, as more and more territory comes into cultivation.

France, always famous for her roads, is repairing those which suffered from abuse and neglect in the war period and is also building two motor roads between Paris and Lyons, one for fast touring cars and the other for commercial vehicles.

Greece, by royal decree, has appropriated $\$ 386,000$ for steam rollers and other machinery to be used in road building under the direction of the Public Works Service.

Japan is active in bettering her highways, the city of Tokio spenting at present Ien $2,000,000$ for paved streets.

With the coming of some reasonably sapid means of communication between her far-flung provinces; China will progress to an extent hitherto unthought of. The lack of railroads or good roads reaching back into the interior where the great crops are grown and enormous mineral deposits await some means of transport, has dwarfed the possible exports of that rich country and impoverished millions of its reople. The basis of a road system in China lies in the 40,000 miles of old imperial highway linking Peking with

[^56]

## PASSENGER "TRUCKING" IN MANCHURIA

First Motor Line is Being Operated for Fassengers and Freight in Changchun


Five American motor trucks are pioneering in practically unbroken territory at Changchun, Manchuria, and are paving the way for the future development in that province for extensive motor transportation lines. The illustration shows one of the trucks extricating itself from the mud of a ditch just outside of the city of Changchun



The American trucks made their first appearance in the district by way of the Peking-Mukden railway, going overland from Mukden to their destination to take up the service of carrying. The motor truck is coming more andmore into favor with the Chinese officials and merchants and is doing manful service, often under adverse circum: stances

Rounding the Drum Tower at Mukden enroute to Changchun. The bodies of these trucks were constructed to the specifications of the buyer, a Chinese official, and are of a combination character being used


A comparison of the old and the new modes of transportation in China is given by the trucks and the primitive hooded mule cart shown in this picture taken on the streets of Mukden. Trucks Thave a large future in the development of China and both the forcign and native population are rapidly recognizing this fact
to convey both passengers and freight. Similar trucks are at work in cities of North, Central and South China taking the place of street cars in many instances


These trucks are now runnin, between the South Manchurian railway station and the Chinese city at Changchun carryiug cargo, Tuman and otherwise. A lack of roads makes this work often difficult but the advent of the motor freighters is said to have given impetus to road construction, which is expected to be inaugurated shortly


She: "If you'd taken the car to Ryton when II told you to we wouldn't have been stuck here like this"

## The Auto Palace Co.

## (British)

## PRACTICAL MOTOR ENGINEERS <br> Telephone West 465 <br> SHANGHAI <br> 362 Avenue Joffre

There is no other business where a life-long experience is so essential as the overhauling and repairing of automobiles and internal combustion engines. Every motorist should make a point of satisfying himself that the people with whom he contemplates entrusting his car are--

## EXPERTS

We are British Experts with a life-long Home experience-Garage as well as Manufacturers. All our work is estimated on before a start is made. All work under the constant supervision and help of an English qualified Mechanic-and Ignition and Carburation work executed by him personally. Cars renovated and painted with English Paints and Varnishes.

[^57]
## Shanghai Regulations Published

(Continued from page 17)
44.-No motor vehicle shall pass another motor vehicle in motion proceeding in the same direction, in the section of Bubbling Well and Nanking Roads between Mohawk Road and the Bund.
45.-No empty passenger vehicle, or one which is occupied only by a paid driver, shall (except for purposes of crossing) be driven on Nanking Road, east of Thibet Road, between the hours of $8 \mathrm{a} . \mathrm{m}$. and 10 a.m., noon and 2 p.m., and 4 p.m. and $6 \mathrm{p} . \mathrm{m}$. ; or on the main Bund Road south of Peking Road.
46. - No motor truck, wagon, handcart, wheelbarrow or other freigh ${ }^{t}$ vehicle, or coolie carrying a load, shall (except for purposes of crossing) use any portion of Bubbling Well Road, Nanking Road, or the main Bund road south of Peking Road, unless the immediate destination of such vehicle or coolie can be reached in no other way.
47.-Except on a duly authorized Vehicle Stand, the ranking or parking of vehicles on a highway shall as a rule be permitted to a limited extent and/or for a limited time only; and shall be dependent on the exigencies of traffic.

The Vehicle Stands authorized for ricshas only are indicated by signboards. Those authorized for the ranking or parking of motor or horse drawn vehicles are specified hereunder:-
(1) Bund (Center) between Avenue Edward VII and Peking Road.
(2) Avenue Edward VII (Center) between the Bund and Kiangse Road.
(3) Hankow Road (Center) between Honan Road and Kiangse Road.
(4) Soochow Road (North side) between the Garden Bridge and Chapoo Road Bridge.
(5) Whangpoo Road (South side) East of Astor Road.
(6) Avenue Edward VII (North side) between Yunnan Road and Thibet Road.
(7) Thibet Road (East side) between Nanking Road and Burkill Road.
(8) Thibet Road (East side) between Nanking Road and Kiukiang Road.
(9) Bubbling Well Road (South side) between the main Race Club gate and a point opposite Myburgh Rcad.
48.-No vehicle shall be ranked or parked for an extended period in Nanking Road between Shantung Road and the Bund. Temporary ranking and parking accommodation in this section is provided for the vehicles of persons visiting business premises, such places are marked by means of white lines on the kerb and no vehicle shall be ranked or parked except where the kerb is so marked. No vehicle shall be ranked or parked on the south side of the above section of Nanking Road between the hours of $11.45 \mathrm{a} . \mathrm{m}$. and $12.30 \mathrm{p} . \mathrm{m}$., Sundays excepted.
49. - No vehicle shall be ranked or parked in Whangpoo Road between Astor Road and Garden Bridge.
50.-No person shall walk, or drive or cause a vehicle to remain on a highway or section of a highway in contravention of an order made by the Commissioner of Police restricting or prohibiting the use of such highway or section of a highway by pedestrians or vehicles.

For the better regulation of traffic the Commissioner of Police is authorized, in his discretion and as circumstances may require, to restrict or prohibit the passage of pedestrians or vehicles upon any specified highway or section of a highway, either generally, or in a stated direction, or within certain hours; and any such restriction or prohibition shall have the effect of a Traffic Regulation authorized by the Council.
51. - No person shall cause a vehicle to be ranked or parked at any place on a highway after the receipt of notice from a police officer that such ranking or parking is prohibited.
52.-No vehicle when ranked at the side of a roadway shall have its inner whecl or wheels more than 4 inches from the kerb.
53. -The excessive discharge of smoke from the exhaust of a motor vehicle on a highway is prohibited.
54.-The use of an open exhaust or "cut-out" on a motor vehicle on a highway is prohibited.
55.-No person shall drive a horse-drawn wagon or similar heavy ehicle on a highway at a faster pace than a common walk.
56.-No horse, whether attached to a vehicle or not, shall be left on a highway unattended or in such a condition that it is not under complete and immediate control.
57.-A led horse on a highway shall be led by the near rein against the traffic on the right hand side of the roadway facing the direction of travel.
58. - A person leading a horse on a highway between the hours of sunset and sunrise shall carry a lighted lamp.
59.-A person riding a horse or a coolie carrying a load on a highway shall conform generally to traffic regulations regarding vehicles and their drivers.
60.- No horse shall be harnessed or unharnessed on a highway in such a manner as to cause unnecessary obstruction to traffic.
61. -Traffic at the jetties and pontcons on the River and Soochow Creek is under the control of the Police, who have instructions to prevent overcrowding the jetties and overloading the pontoons and otherwise to maintain public access thereto. The landing stage immediately to the north of the Customs pontoon is open exclusively for passenger traffic, while the use of the remainder of the jetties and pontoons between the Soochow Creek and Avenue Edward VII is confined to the landing and shipping of cargo.

## MUNICIPAL NOTIFICATION

No. 2786.<br>\section*{MOTOR BICYCLES AND PRIVATE, PUBLIC AND TRADE MOTOR CARS.}

Notice is hereby given that the following amended license conditions. will be enforced from January 1, 1921 :-

## Motor Bicycle License.

1.-That unless with the consent of the Council this license be not. transferable to any other person.
2.-That this license refers only to the vehicle in respect of which it is issued, which vehicle is described in the application form; and that the corresponding license number be not used on any other vehicle.
3.-That the licensee and the driver conform to all Traffic Regulation in force for the time being.
4. - That the number of the license exhibited in a conspicuous posi-tion:- $(a)$ in front of the machine, showing to either side, on a number plate having duplicate faces affixed lengthwise to the front mud-guard; and (b) at the back of the machine, showing rearwards, on a number plate affixed crosswise to the back mud-guard or in other suitable manner. That the figures composing the number be white on a black ground ; that they be $1 \frac{3}{4}$ inches high and $\frac{5}{16}$ inch broad in all parts, that the width of the space occupied by each figure except the figure 1 be $1 \frac{1}{4}$ inches and that the space between arjoining figures be $\frac{1}{4}$ inch, that the figures be maintained at all times easily legible, undefaced, and unobscured by any portion of the vehicle or by any object attached thereto.
5.-That between sunset and sunrise the vehicle carry :-
(a) a lighted lamp exhibiting a white light towards the front and so maintained at all times as to be clearly visible at a reasonable distance; and
(b) a lighted tail lamp exhibiting a red light towards the rear and so placed and maintained at all times as to render every figure of the license number easily distinguishable at a reasonable distance.
That if a side car be attached to the said vehicle, a lighted lamp exhibiting a white light towards the front so maintained at all times as to be clearly visible at a reasonable distance be affixed thereto in such a manner as to indicate the extreme width of such side car.
6.-That the driver produce this license and his driver's licensewhen called upon to do so by the Police.
7.-That the licensee be responsible for any damage caused by the negligence of the driver or other person in chage of the vehicle.
8.-That no gratuities of any kind be paid to any employee of the Council.
9.-That on a breach of any of its conditions the license be subject. to withdrawal or suspension by the Council, the whole or any part of the money deposited as security be liable to forfeiture at the option of the Council, and the licensee be liable to prosecution.

## Private Motor Car License.

1.- That unless with the consent of the Council this license be not transferable to any other person.
2.-That this license refers only to the vehicle in respect of which it is issued, which vehicle is described in the application form ; and that the corresponding license number be not used on any other vehicle.
3.-That the licensee and the driver conform to all Traffic Regulations in force for the time being.
4.-That the number of this license be exhibited in a conspicuous position at the back of the vehicle; that the figures composing the unmber be white on a black ground; that the figures be $3 \frac{1}{2}$ inches high and $\frac{5}{8}$ inch broad in all parts, that the width of the space occupied by each figure except the figure 1 be $2 \frac{1}{2}$ inches and that the space between adjoining figures be $\frac{1}{2}$ inch; that the figures be maintained at all times easily legible, undefaced, and unobscured by any portion of the vehicle or by any object attached thereto.
5.-That between sunset and sunrise the vehicle carry :-
(a) two lighted lamps, one on each side, exhibiting a white light towards the front and so maintained at all times as to be clearly visible at a reasonable distance; and
(b) a lighted tail lamp exhibiting a red light towards the rear and so placed and maintained at all times as to render every figure of the license number easily distinguishable at a reasonable distance.

## Soft Riding on Hard Roads

$\boldsymbol{T} R O Z E N$, rough roads emphasize the wonderful cushioning action of three-point suspension Triplex Springs, in the Overland Four-Door Sedan.

This Sedan protects passengers from bad roads as well as from bad weather. Triplex Springs give it the
steadiness of a heary car of long wheelbase with the economy in fuel tires and upkeep of a light car.

Overland owners report an ever increasing enthusiasm over the greater riding comfort, performance, equipment and appearance of this new car.

# THE CENTRAL GARAGE COMPANY <br> Exclusive Agents for Central China <br> 'Phone C. 6006 <br> SHANGHAI <br> 9 Hongkong Road <br> "Boost for Good Roads in China." 

## MODERN TRANSPORTATION EVOLVES MANY THINGS


6.-That the drinumbunce ini license and his drivers licemse

7.-That the drive tmonk the the Palien the watient infomation possible regarding any criminally suspicious conduct or movements of any person driven by him.
8. -That the licensee be responsible for any damage caused by the negligence of the driver or other person in charge of the vehicle.
9.-That no gratuities of any kind be paid to any employe of the Council.
10.-That on a breach of ans of itcombitions the license be subject to withdrawal or suspension by the Council, the whole or any part of the money deposited as security be liable to forfeiture at the option of the Comacil, and the licansee lex liabie to ponecution.

## Public Motor Car License.

1.-That unless with the consent of the Council this license be not transferable to any other person.
2. - That thi hicence veter (m)ly the the remele in reanect of which it is issued. which vehicle is described in the application form ; and that the corresponding license number be not used on any other rehicle.
3. -That the licenteremb the inver contorm to all Trattic Regula tions in force for the time being.
4.-That the number of this licemse be exhbited in a conspicuous position at the back of the rehicle; that no license number plate other than that issued by the Council be used, and that the figures thereon be maintained at abl times easily legible. molefaced and mobsened by any portion of the vehicle or by any ohject attached thereto.
5. That between sumeet and sumbe the velicle carry :
(a) two lighted lamps, one no each side, exhibiting a white light towards the front and so maintained at all times as to be clearly visible at a reasonable distance; and
(b) a lighted tail lamp exhibiting a red light towards the rear and so placed and maintained at all times as to render every figure of the licemse mumber easily distinguishable at a reasonable dixtance.
6.-That the driver produce this license and his driver's license when called upon to do so by the Police.
7.-That the driver furnish to the Police the earliest information possible regarding any criminally suspicious conduct or morements of any person driven by him.
8. -That the licensec keep a register wherein shall be entered the name and address of any person hiring the car in respect of which this license is issued, whether the hirer pays cash or not for the hire, which register shall at all times be open for inspection by the Police.
9.-That the licensee be responsible for any damage caused by the negligence of the driver or other person in charge of the vehicle.
10.-That no gratuities of any kind be paid to any employee of the Council.
11.- That on a breach of any of its conditions the license be subject to withdrawal or suspension by the Council, the whole or any part of the money deposited as security be liable to forfeiture at the option of the Council, and the licensee be liable to prosecution.

Trade Motor Car License.
1.-That unless with the consent of the Council this license be not transferable to any other person or firm.
2.-That the number plate corresponding to this license may be used on any motor vehicle boná fide the property of the licensee or temporarily in his charge; provided that in no circumstances shall it be used on a vehicle which is let out for hire or be duplicated for use on two vehicles at the same time.
3.-That the licensee and the driver conform to all Traffic Regulations in force for the time being.
4.-That the number of this license be exhibited in a conspicuous position at the back of the vehicle; that no license number plate other than that issued by the Council be used, and that the figures thereon be maintained at all times easily legible, undefaced, and unobscured by any portion of the vehicle or by any object attached thereto.
5.-That between sunset and sunrise the vehicle carry :-
(a) Two lighted lamps, one on each side, exhibiting a white light towards the front and so maintained at all times as to be clearly visible at a reasonable distance; and
(b) A lighted tail lamp exhibiting a red light towards the rear and so placed and maintained at all times as to render every figure of the license number easily dirstinguishable at a reasonable distance.
6.-That the driver produce this license and his driver's license when called upon to do so by the Police.
7.-That the driver furnish to the Police the earliest information possible regarding any criminally suspicious conduct or movements of any person driven by him.
8.-That the licensee be responsible for any damage caused by the negli ence of the driver or other person in charge of the vehicle.
9.- That no gratuities of any kind be paid to any employee of the Council.
10. -That on breach of any of its conditions the license be subject to withdrawal or suspension by the Council, the whole or any of the money deposited as security be liable to forfeiture at the option of the Council, and the licensee be liable to prosecution.


# ANOTHER CARBURETOR PERFECTED <br> <br> Said to Enable Engine to Develop Full Power 'Though Cold 

 <br> <br> Said to Enable Engine to Develop Full Power 'Though Cold}

A new earburetor. for whish it is lamed that the engine

 been bomght wht lay whellown bingli-h carlometor export, C. Binks, of Manchester.


Cross section of the new Binks carburctor showing; A. Tend contractor tube; $B$, butterfly value; $C$, pilot jet feeder; $D$, reservair retarding jet; $E$, needle valve; $F$, packing; $G$, finger nut to operate needle valve; $H$, gland nut; $I$, pilot jet siaing jet; J, petrol duct; $K$, float fastener ; L, pilot jet; M, pilot jet adjuster
The instrument consists of a pulot jet for slow lurining and flexibility, controlled by an ordinary butterfly valve. This jet enables the car to be run at five to six miles per hour, and can be adjusted instantly to suit any type of engine by the simple expedient of manipulating a sypare-headed sorew (AI). When an insease of power is desited, the throttle is cpened further, the main jet then being bronght into operation. The Vena contractor tube which surrounds this jet, which is of considerable length, calls for special notice, as it has a hole throngh it that is much larger than the sazing jet which governs the amount of petrol used. By: Hhis means the difficulty and hesitetion which arisen frequently when changing orer frem the pilot to the main jet. monss the former is richer than necessary, cwing to the extreme weakness of the mixtme cansed by the throttle being over-opened on the filot before it catches up sufficient fetuel en the main jet. In this carturetor the main jet asts as a reservoir, and the moment the throttle is opened beyond the range of the pilut a momentanily richer mixture is pro-
vided fir the engine by means of the petrol stored in the reservoir jet. This gives the necessary pick-up supply of fotrol.

When the engine has get going, the permanent supply of pethol is governed by the sizing jet. As the speed of the engine increases, the very long and comparatively small hole in the main jet has a retarding influence on the petrol, and the faster the engine runs the more retarding effect it has, thus keeping the mixture absolutely correct. The jet also is of very small diameter outside, being less than 1-8 in This has been found by extensive experiments to be an important factor when working with a properly-designed Vena tube. The choke tube round the main jet, it is claimed, also varies from all other carburetters in-as-much as it is a true Vena contractor tube, of sufficient length to comply with Professor Benouli's formula.

The special feature of the Vena tube is that the mouth or choke immediately round the jet can be very much constricted, and, as long as the opening angle is correct and of sufficient length, the same amount of gas and air can be drawn through it as if it was the full bore of the induction pipe, having the enormous advanage of a tremendous velocity round the jet, without any loss of capacity. The sizing jet, instead of being a fixed jet, which has to be changed, is governed in size by a finely-adjustable needle valve, and all one has to do in tuning the carburetor up is to close down this adjusting screw or sizing jet until the mixture is as weak as can be run on conveniently.

On a 15.9 h.p. Arrol-Johniston car $34 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. has been obtained and a speed of $45 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Previously, the best obtained on this particular car was $22-23 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. Coupled with this, the perfectly level and sweet running was most proncunced, and the very tine jet, combined with the "true" venturi tube, gives an exceptional liveliness in picking-up and ample power on hills.

The canburetor is very easily attached and fitted on to almost any, car in a few minutes, while tuning-up can be effected without taking any portion of the carburetor to picces.

## MOTOR BUS CARRIES 90 PERSONS.

IVhat is caid to be the largest passenger-carrying motor velicie ever huilt was designed by D. W. Templing, an automobile engineer in Ohio. The motor street car or bus carries ninety passengers, has upholstered seats, electric lights and adjustable mindows. It runs on six wheels and the engine is a six-cylinder rated at seventy-five horsepower.

## Prest-O-Lite



## Here's your assurance of sure starts and bright lights

W
HEN your car is equipped with a Prest-O-Lite Storage Battery you get more than a battery; more than a mere accessory to your motor car. Every Prest-O-Lite Battery is the company's pledge to the car owner of a positive and efficient starting-and-lighting service.

Prest-O-Lite Service begins to work for you from the moment you press your starter, or switch on your lights, for the first time. Prest-O-Lite Service is with you wherever you go ; you find it waiting for you and always ready to respond
to your starting and lighting requirements-in numerous cities towns and villages throughout the world. When you buy a new car, remember that a Prest-O-Lite Storage Battery as standard equipment is proof that the manufacturer has given the most careful thought to satisfactory starting and lighting service.

If your presont battery noods mplacomant, remember thore is a powerful Prost-()-Lito stomago Battery of comeet sico and capacity for orery mako and motel of automobile.

Complete range of sizes now in stock


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## AMERICANS LOOK TO FOREIGN TRADE

## Well Known Manufacturer Gives a Bit of Self Criticism Regarding Exports




 definition of the attitude of the American mamufacturer whand foreigh luanes. las reanla lean mate la ome of the leading makers of the Cnited States and is hew published because of its frankness and crispuess. It is of
 Fineric:an comections. She mambiatimer, whene letter follows, was not alwa!s emitely friond! towat fomeign trade but has swung into line recently
"The following I reliene is thpical of the areage antomobile manufacturer's attitude toward foreign trade, witl: the exception of two or three of the larger manufacturers.
"The manufacturer of a well-known, hign-priced American motor car, when alpmaded $1 . y$ a foreign dealer with is view of opening negotiations for the sale of the car in the dealer"s comentry, argied aganst the dealer.s proposition, and adranced the opinion that by the time arrangements could be terminated and the dealer supplied, business in the United States would again be so good that they would not need the onders: from the foreign combty:

- Mind you! The manufacturer wanted the business at the time and as a matter of fact needed it to assist in bolstering up production that was low on account of a falling off in domestic demand. He seemed willing to do business with the foreign dealer, rroviding immediate returns were assured. His counter proposal was that the dealer arrange to at once place orders for 50 cars for immediate shipment, guaranteeing such orders by bank deposits in New York City. This proceal was, made in the fire of the fact that the car was qactically unknown in the dealer's country.
"The manufacturer's attitude being: We are willing to do lusiness with you to help us ont of a hole, poriding this lusines shews immediate retmas, lat we are not willing to wait for you to develop your market, for after business has returned to normal in the United States we will be too busy with taking care of domestic business and cannot be bothered with foreign orders.
"Another instance came to my notice wherein a dealer bidding for the sales framelise of a limh-griced Imemiam car for sale in Hongleng amb the imbediate sumombing district in China was informed lat he mandetmer that the manufacturer would be agreeable to considering his appliation poviding he would agme to diepues of at leat 50 cars ler year.
"Considering the fact that the eare anpied for sells in this country for between s.jnou and sis.onco and the further fact that the whole of Chimat only has 2,800 cars in use,
these cars heing purchased at an average export price of st,2014. It is but - mat tising for lean that nothing further
 fas: onl in the shambai comentar dionist, not the whole of (llina)

The whele nouble seems to be that the American menufacturex cannot understand the viewpoint of the foreign purchaser. He is inclined to look upon the foreign pur"aners as [efle with peatiar inleas (this probably from the reason that their ideas do not exactly coincide with his (inll, and he is not prene to put himeelf out to become acigraintad with the world's markets and absorb some of the tister. and emthent: of the foreign purchasers.
'The sooner American manufacturers realize the fact that the lign automolile future lies in the foreign markets, and prepare themselves to take care of this trade, the better r.fit they will be.
'I believe we can safely predict that within the next five sears fully 20 Ielcent of the automobiles manufactured will be sold in countries foreign to the country of manufartur:
'The following figures should be of interest:
Statistic's show that we have in use in the United States one automobile to each 15 persons; while in the rest of the "omla there is only in use one automobile to each 1,175 persons.
'The foreign markets, including Canada, have only constimed it matter of $1,360,300$ motor cars, including both American and,foreign makes as against approximately $7.000,000$ being consumed in the United States.
'One must of course take into consideration that the pu capita buying lower of the forcign countries is not as areat as in cur own comtry, but even thongh we reduce the figure by 50 percent, the balance would stili be greatly in favor of the foreign market.
"The important questions seem to be: Will American manula turces as a whole mako a bid for this trade; and, once securing it, will they hold it by conscientious effort?

They must not lose sight of the fact that they will soon have to combat with keen competition from European manufacturers.
'This meritorious competition from Europe is already being felt and, when reinforced by a natural sentiment, as is indicated by recent laws and provisions fassed by some of the Britich Colonies, it becomes a matter that will require our very closest attention if we do not desire it to reach a point where it will be irresistible.
'One thing is certain: To seek and hold the overseas trade American manufacturers must cater to the ideas of (Continucd from Page 75)


T is the carbon that steals the power of your engine - causes that knock-and retards hill climbing. Cleanliness is the secret of a powerful motor that will take hills and pull through mud and sand on high.
Johnson's Carbon Remover is the easiest, cleanest, safest and most satisfactory remedy for carinon. It will save you $\$ 3.00$ to $\$ 5.00$ over other methods and without laying up your car. Johnson's Carbon Remover, used every 500 miles, will prevent the accumulation of carbon and keep your motor snappy and full of 'pep'. You can do it yourself in ten minutes-without even soiling your hands-and the cost is trifling.

## Johnson's Car Savers Keep Your Car Young

If you run your car without any attention you will sell at a big loss. But with a little time, care and Johnson's Car Savers you can cut the depreciation in half. There's a Johnson Car Saver for every purpose-no experience is required for their use-and they can all be applied by the average motorist with perfect results.

Johnson's Radiator Cement-seals leaks in two to ten minutes. Johnson's Biack-Lac-a permanent and waterproof top dressing. Johnson's Auto-Lak-a quick drying, one coat body varnish. Johnson's Cleaner-will remove scum, grease and road-oil. Johnson's Prepared Wax-for polishing body, hood and fenders. Johnson's Stop-Squeak Oil-stops squeaks in springs, shackle bolts, etc.
Insist upon your dealer supplying you with JOHNSON'S CAR SAVERS. Don't stock or usc unknown sulstitutios. Wirite for our folder on Kecping Cars Young - it's free.
S. C. JOHNSON \& SON, Racine, Wisconsin, U. S. A.

## TRAILERS SOLVE THE PROBLEM

## Motor Trains Predicted for the United States and E!sewhere



The trailers lowl while the motor hanls the filled ones losing no time in waiting

EVERY CAR on a passenger-or freight-train is a "trailer." No one would think of providing a separate locomotive for each car : on the contrary, we have in the United states the longest and heaviest trains and the mont powerful locomotives in the world, s:ays the "Literary Digest." It is strange that the application of this principle to highwe tramportation has been so tardy of recognition. Now that it has begun, it is spreading with a hu:h, helped on by powerful mator-trucks and amooth, hand-waface roads. The single motor-truck with its one trailer is now no uncommon sight, and longer trains may become familiar in the future. Harry Willin Perry, who writes (nl the subjest in "The American Fxporter" (New York), believes that trailers will help to solve the transportation problem all over the world
'Railroad service has broken down under the strain of the last five years and older miethods of transportation by animal power have leen hoplessly outdi-tanced by the march of progress in industry and commerce. As a result, manufacturct, merchents, and farmers are tuming to the motor-vehicle. But there are not enough trucks to meet the demand: furthemore, the cost of hamage be motortack is high, due manly to lack of geod hightiry, high drivers' wages, and the high price of gasoline.

A partial solution is leing foum in mans placer be the use of the trailer with motor-trucks, tractcks, and parionger-atomobiles. Fis doubling or tripling the hauling capacity of the motor-truck, at only slightly increased cluating expene, the trater maker it possilis. to tranomet as grater tomage in agiven time and to cut the ton-mile cost almost in half.
"Trailers are now made in a great variety of types and sizes and are used in almost every industry. More are used
in the lumber business than in any other one industry. The iron land steel trade employs a large number, farmers and dairymbn use a great many, and others are used by meatpackers, contractors, the building trade, ice and ice-cream compranies, the automobile industry, city departments, general haulage companies, mctor-truck express cperators, and by manufactuaers of fumiture, textiles, paper, boxes and barrels, machinery, and other articles.
'In the United States, where from $3,000,000$ to $4,000,000$ passenger motor-cars are cowned by farmers, the light two-wheel trailer is much used for hauling farmproducts to market behind rumabouts and touring-cars. Among the many advantages of this methot of marketing are that the horse can be kept at work in the field, that a wenan does not mind driving the car, and that fruit, berriss, and vegetables arrive in fresher and better condition. The trailer can be attached and detached instantly and does not interfere with the customary use of the machine for prassenger purposes.
'Drawing' of a trailer increases the consumption of fuel by 10 to 20 percent., according to conditions, adds slightly to tire wear, and slows the rate of speed about one-fifth: But doubling of the tonnage hauled per trip much more than offsets the additional operating expenlse.
'The United States seem to be the only country in which the advantages of the semitrailer are widely understood. One grocery company, operating forty retail stores in New Jersey, operates thintr-six six-ton semitrailers with twenty five-ton tractors, and estimates that it saves a total of $\$ 28,800$ a year by eliminating loss of time of tractors and drivers. The load capacity of a truck is easily doubled and commonly tripled by the use of a semitrailer."


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Exclusive Agents for GARFORD and FEDERAL Trucks
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WE CAN ALSO SUPPLY YOUR TRUCK BODIES
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TRUCK


## THE LITTLE THINGS ABOUT YOUR CAR.

It is the lithe things ahont sour mome car that count just as is is the lit:le things in son: hacimesi that olten cause your bent laid plates to go metray.

Rich wonth on this page will be published little tinista alome fom motor car that you should knomoften, knowlentse that will owe you repair bills.

 ammonia. This is alolet the wot: thing thet combla 1 a dame, as atmonemia dentrally defory the fintio. Unfortunately the ammonia gives a little temporary brilliance to the fini:h. hut in the long tum it ruins it. In le t, at mamufatures: recomesod that no (ar le kept in a abla or barn, as the ammonia from mamure gradually destroys the enameled sufate.

Many modern cars are fitted with a battery ignition system in which the distributer arm is removalle. 13y 3 moring this am the (an owner makes it posible (1) steal his rehicle colly ly towing away or ly fitting another distributing arm. The arm may be removed simply by unclasing the distributer corer to whish the wite ate attached. It usually happens that there is only one way in which this amm will fit, so that thene need te no worrs about replacement.

In eases where slippage has developed in a wome cill he a temporary repair may be managed by forcing several thin wooden wedges under the facing. Even matches have been made in this connection. In similar ca-es a sliphing bake band may be temporarily cured by driving nails between the lining and the bamd.

If mixture is thought to be too leme pull ul a limhtiy on the "chocker" on the dash. This gives a richer mixture. If the engine speeds up it show: foo lean a mixtme amt low speed adjustment should 10 cipemed matil the eneine tuns properly. (of courec, the "choken" showh be returned to its usual position.

Tappet and moker arm raive max fo (allet ly the clename hetween the valve stemand talled and being tow

 tight or operating untrue. The chief noise is usually caused by excessive clearance, which is easily taken up. In setting the talpets, or clearance at the rockor :mm whe low? thi.kners galge and get all intakes and olmate th have the same clearance, which figures vary in different engines. TWith the rake checa, teet for side liy in the valve ar in pres.

In fowisg tla mafler. after the part has licen disassemiled and the fart cleaned with kerosene, it is well

 hok have not lacn reduced in size he accumulations of burned oil or carbon.

Tinjuries resulting from running solid truck tires in car tracks are serious and readily apparent. The construction of splid tires does not permit a ready distribution of part of the road strain to the rail's lawer flange, so the major portion is carried upon the section running on the car rail with the result that it is quickly wom and broken away. The injury is not confined to one or two spots on the tire, but extends around the entire cirumference, eventually learing the tire reduced by onehalf to carry the full load.

Cuts in a solid tire-should not be neglected and more than a cut in the tread of a pneumatic. Cuts near the edge of the tire tend to enlarge, especially in a circumferential direction. If not properly trimmed, the torn rubber of "Hag" catches as the wheel revolves and the injury becomes worse.

In allitemolite ralse camnot be either an inlet or an exhaust. It can be an inlet only on the engine, operated by the piston's suction downward. The exhaust valve mu-t tef fonced den against presure of the burned gisnes in : the cylinder and theretuee must be me:hanically operated.

## AND IF YOU ARE STORING YOUR CAR

 ali w- detwiontion of their the during the minter months whon cat an torect. The the surgeon has solved this 11.' lem for them.

When -twing the car it the carage, have a tire surgenn store the tires at his shop. He will first carefully inspect and repair them. He will not only thoroughly clean them, but riil give them a coat of soapstone or preservative of - an:se kind.

Not only will proper care of four tires during the long winter himthe sate won mory in lesened depreciation, but it will keep them in first class condition ready for the opening of the motoring season.

## MORBIS OXFORD 11-9 h.p. Quality Cars



THE name, the appearance, and the sincere quality of the beautiful little Morris-Oxford Car are so well known that ownership of an example of the make puts a motorist into a certain enviable category-for a man is often judged by his car.

Not that it is expensive to belong to the Morris-()xford brotherhood. 'The initial price of the 4 -seater with full equipment is very low. And every little detail is sound, and built for the long years to come.

That is the first cost. The running expenses include a petrol consumption averaging over 25 miles per gallon and a rery low consumption of wil. 'The tires are $710 \times 90 \mathrm{~mm}$. Dunlop Magnums and the $1+\frac{1}{2}$ cwt. car is very easy on them.

## THE CENTRAL GARAGE COMPANY

## Exclusive Agents for Central China

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Shanghai.
Phone C. 6006.

[^58]
## RENAULT COMBINES LINES AND LUXURY,

The French Car<br>Possesses Durability and Satisfies Desire for a Medium Priced Car



TOO MANY AT'TEMIPTS have been made unsucessfully to produce a motor car poossessing lines, style and durability that will be capable of being placed unon the market at a reasonable price. Often luxury is


Accessibility is made easier in the Renault by the location of the radiator in the rear
empasized at the expense of performance or visa versa. The new Renault 13.9 horsepower, the representatives for which in China are the Auto Palace Company, Shanghai, combines luxury and dependability in a happy manner that has come

only after tears of endeavor upon the part of the maker. This smallest member of the Renault family is built as conscientiously as the larger six cylinder, 40 horsepower model,

Following long-established practice, the radiator of this car is placed behind the engine, and however it may be argued it detracts from fashionable lines, for a utility car the engine accessibility that is provided is very attractive. No time need be spared, discussing the power unit, for it is sturdily, conventional with its side-by-side valves, threebearing crankshaft, hot-air intake for the carburetor, and so forth. A combined dynamo and starting motor is situated on the off side parallel to the cylinder block, and is, of course, positively driven through a universal joint-an excellent feature-while even yet more easy access is given to the

magneto, for it is mounted with its armature across the chassis, driven by skew-gears off the timing finions.

Technically, the main feature of interest on the car is the rear axle and suspension system. A utility chassis must of necessity fulfil two requirements. It must be light, and also capable of being rapidly put together. Being light, it is apt to flex under severe conditions, which is bad for the coachwork, and so on the Renault three-point suspension is employed by using two semi-elliptic front and one arched transverse back spring. To facilitate production, the back axle, torque tube and gearbox are built as a unit. 'This is attached by a ball and socket joint to the center chassis cross-member, and at once all torque, drive, and braking strains are correctly dealt with.

Otherwise, beyond the facts that central control for the three speeds is fitted and that the switchboard, with its ammeter and light controls is mounted aciually on the steering column, there is nothing remarkable in the mech: anical consruction.


5-ton "KARRIER" lorry fitted with steel-lined and reinforced tipping body and twin-screw tipping gear.

## REMARKABLE SERVICE UNUSUAL ECONOMY. COMPLETE DEPENDABILITY.

These are three reasons the lorry is supreme.
These are three reasons we get repeat orders.

## Write for Catalogue.

## KARRIER MOTORS, LTD.

## THE " KARRIER" REDUCES DELIVERY COSTS AND INCREASES YOUR TRADING AREA.

Besides giving all the speed you could desire, the operating cost of the "KARRIER" is significantly small when compared with that of other lorries.

It meets the demand of the majority and covers the widest field of utility-it is the greatest value on the market to-day.

In appearance, the high seats of the typically French standard body is rather accentuated by the absence of the


The rear axle and transverse springing of the Renault
conventional radiator, but the car is by no means ungraceful. The performance of the car, is all that it should be. 'The

chutch is smicoth, the brakis powerful, the gears do not hum, and the back axle is absolutely quiet. On the worst roads, the springing is so good as to enable a very grood average spreed to be maintained. The car is not finst, sis fint as maximum speed is concerned $40 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.

In an absolute traftie stop the devign of the chat th and transmission enables a ton-gear start to be made, althongh. naturally, the practice is not always advisable.

Rogading fuel consmmption-that always important gecestion-2. 4 miles: to a sallon would be a rex womernation estimate for the car, for its compative lightuesis chatures a minimum of waste.

## PREPARING FOR THE GRAND PRIX.




 (e)use at shastronge, and pronemmed hime elf sathedied 11 ish

 mathes of atas will complo in lho crome 'The value of





## GENERAL MUTORS UNITS COVERS EVERY PHASE OF THE INDUSTRY

Many men in the automotive industry who consider themselves thoroughly familiar with all its ramifications would find it difficult to draw a diagram of the General Motors Corp. Its magnitude is better visualized with a list of its scores of units. Here they are :

## General Motors Group :

Buick Motor Div., Flint. Cadillac Motor Car Div., Detroit. General Motors Truck Div., Pontiac. Oakland Motor Car Div., Pontiac. Olds Motor Works Div., Lansing. Scripps-Booth Corp., Detroit. Sheridan Motor Car Co., Muncie.
Chevrolet Groct
Chevrolet Motor Co. of Mich., Flint.
Cherrolet Motor Co. of N. Y., Tarrytown, N Y.
Chevrolet Motor Co. of St. Louis, St. Louis, Mo.
Chevrolet Motor Co. of Texas, Ft. Worth.
Toledo Chevrolet Motor Co., Toledo.
Chevrolet Motor Co. of Bay City, Bay City.
Chevrolet Motor Co. of Kansas City, Kansas City.
Chevrolet Motor Co. of Atlanta, Atlanta.
Chevrolet Motor Co. of Minnesota, Minneapolis.
Chevrolet Motor Co. of Cal., California.
General Motors of Canada, Ltd.:
Canadian Products, Ltd., Div., Walkerville.
Chevrolet Motor Co. of Canada Div., Oshawa.
McLaughlin Motor Car Div., Oshawa. Olds Motor Works of Canada Div., Oshawa.

Tractors and Implements:
Samson Tractor Div., Janesville. Samson Tractor Co. of Cal., Stockton.

## Accessories

United Motors Group:
Buffalo Metal Goods Co., Buffalo. Dayton Eng. Laboratories Co., Dayton.
Harrison Radiator Corp., Lockport. Hyatt Roller Bearing Div., Newark. Jaxon Steel Products Div., Jackson. Klaxon Co., Newark.
Lancaster Steel Products Corp., Lancaster.
New Departure Mfg. Co., Bristol.
Remy Electric Div., Anderson.

## Miscellaneous

Champion Ignition Co., Flint.
Dayton-Wright Co., Dayton.
Delco-Light Co., Dayton.
Frigidaire Corp., Detroit.
General Motors (Europe), Ltd., London.
General Motors Export Co., New York.
Sunnyhome Electric Co., Detroit:
Central Products Division :
Central Axle Div., Detroit.
Central Forge Div., Detroit.
Central Gear Dis., Detroit.
Northway Motor \& MIfg. Div., Detroit.

Muncie Products Division:
Muncie Parts Div., Muncie.
T. W. Warner Plant, Muncie.

Saginaw Products Division:
Central Foundry Div., Saginaw.
Central Motor Div., Saginaw.
Jackson-Church-Wilson Div., Saginaw.
Saginaw Malleable Iron Co., Saginaw.
General:
Michigan Crank Shaft Div., Lansing.
St. Louis Mfg. Corp., St. Louis.
Dayton Metal Products Co., Dayton.
Domestic Engineering Co., Dayton.
Doylestown Agricultural Co., Doylestown.
Fisher Body Corp., Detroit.
General Motors Acceptance Corp., New York.
Industrial Terminal Corp., Detroit.
Janesville Machine Co., Janesville.
Lancaster Steel Products Corp., Lancaster.
Bearings Service Co., Detroit.
Brown-Lipe-Chapin Co., Syracuse.
Doehler Die Casting Co., Brooklyn.
Durant Building Corp., Detroit.
Flint Varnish \& Color Wks., Flint, Mich.
Independent Lamp \& Wire Co., Weehawken.
Consumers Power Co., Durant Hotel
Co. House Financing Corp., Hyatt, Ltd.,
Lansing Home Building Co., Modern
Housing Corp., Novelty Incandescent
Lamp Co., Wisconsin River Power Co.

Contol of the (ieneral Motor: Comp hext to Chited States Steel, the most colossal industriai enterprise in
 Torgan and ('o. Their ewnethip of mone than si) percent of the "billion dollar a fear" company whe ace mpliander by purchase of the epecolative heddings of IV. (C) J) urant. Pierre S. duPont has been elected president of the company and Jhrant will retne.
 that of the Thated states steel (copp, also under the d milbation of the Morgen interets, and it is acepled as contain that the po-ition which will be occopmed be farant in fuluere
 combination, the U. S. Steel Products Co. No general shake-up in the general orgenization or in the various division- is expected. Numerne change- in the genemal managetent of individual mit- have heon made of late and the tendency has been to phace in executive poritions younger
men who have ability backed by the energy of comparative 1.uth.

No funther expansion is looked for in the near future although the abundance of capital now back of the corporati:n would make it possible to take cver well-establiched comenn which mo. lie in temporary financial difficulties if it were deemed advisable. The possibilitios before the formerul group which conticls the greatest combination in the autometive industry are limitless. The acquisition of control of Cieneral Motors by the Mcrgans and the duPonts "has, not entire! y unexpected to those who had followed the affairs of the company closely. The duPonts have been the largest individual atcekholders since 1918, but their alliance with the house of Magan began only last June.

Is a metter of fact it is generally admitted that the two great groups of financiers were active rivals on the maxket last February in the purchase of General Motors securities and that their operations were responsible for the


4-Seaters, 2-Seaters and Saloon Models just Arrived.

# CHINA MUTUAL TRADING Co., Ltd. 

20 Kiukiang Road
Sole Agents for China
Shanghai
wide fluctuations in market values of the stock. This contest was abandoned later and gave way to an alliance. The Morgans and the duPents together will constitute one of the most poworful factors in the world of finance. The Morgans contrel unlimited cap ital while the duFonts are manufacturers and merchandisers becides posmersing cone of the finest engineering organizations in the United States.

The affilation of the two powerful houses in the motor industry is hated in businces end finencial cincles as a powerful stabilizing facter. Its ramiferatone in this reapeet will extend far leyond the field of motors. Aditianal heavy investment in a lime which has suffered wromsly bey leason ef readiustment isespake supreme confleme mat only in the future of antomshiles but in that of the comntry as well. A steadying influence was oxeted atmost immediatsis in the stock matkel amb atmos 1 the entire list ralliod after al long contimue ismoly which hed cecasioned serione alam. It was hated ans a somal bey
 that it was time bo the

The sale involved about $3,000,000$ of the $19,000,0000$




 has boen shorter lived than that of the dut'onts, but js satid
to have covered a considembly lenger perind then hat elayed since they actually leceme a factor in the company. It was ammonnced last June that Morgun anl (i). hat acquired an interest in the corporation and had underwritten $\$ 3,219,8.56$ comonen thates of 1. Far value of which $1,800,000$ had been ky British and Canadian interests and the balmace, 1,419 , \&.tid shates, hat been offined 1.1 commom stockholders of (imeral Motire at siot athone If it can be a cumed that the price pait in the preant wan-ationaverased 813 a shane the tetal ins.frat 16 in amporat
 price.





 fol the bealld.




 former stochbohders hot assmmins: it was all tahow if at the




ENGINE KNOCKS FROII CARBON<br>Causes Discussed With Simplicity by Automotive Engineer

It is a common silly osition that in motor which is heavily clogged up with carbon knocks because it preignites, writes A. Ludlow Claydon in "Motor Life." Also that such preignition is callsed ly faticles of the carbon remaining incandescent and so setting fire to the new charge when it j: only purtly complewed. Nuw the knok is not ramy due th) peignition at all in most cases but is caused ly the combustion talking flace mush moro raplaty than nomsl, for the rely smble season that the carton rases the comfersion presule and the viclence of the combustion of a compressed charge of air and gasoline increases very rapidly


Compression pressures often are quoted in pumbds per square inch, but this means nothing unless the speed at which the motor is running is given. Owing to valve timing and to the resistance of the manifolde to the pasange of gat the a that compression sumes with the motor weed usually raching a maximum somewhere aromal 1,200 to 1,500 revolutions per minute.

Thus engincers have adepted the more serientific plan of naming compression by a ratio instead of a number of pounds. Issume a motor with a displacement of sisty cubic inches to each cylinder. That is an engine in which each
piston on its downstroke woold draw in sixty cubic inches of gas if the valves, etc:, allowed. Such a cylinder would need a combustion siace alove the top position of the piston of about twenty cubic inches. If it had this amount then the compression ratio would be four to one. This is figured because 60 plus 20 is eighty. That is, the displacement of the piston plus the volume of the combustion space is four times that of the combustion space alcne. Ratios used in practice vary from four to one up to five to one and some racing car engines have used ratios as high as six to one.

Now what is the effect of a good coating of carbon?
A motor with a sixty cubic inch displacement might well be four inch bore. Then the head of the piston would have an area of jost over twelve square inches. The hend of the cylinder would be about the same and the area of the vertical part of the bore abore the top of the piston, plus valve chambers, would be about fifteen square inches. In other words, our combustion space with its volume of twenty cubic inches would have a total wall area of about 39 square inches.

Suppose there was a layer of carbon one-sixteenth of an inch thick over all this area, then the volume of carbon

## Americans Look to Foreign Trade

## (Continued on page 64)

the foreign purchasers and furnish them such refinements as arpeal to the European, the Oriental and the LatinAmerican. In other words, we must fall in line with European manufacturers in this respect. We must also not lose sight of the fact that a car selling for $\$ 5,000$ on our market is, after the necessary expenses of shirping, duty and profits are added, a car that sells for from $\$ 8,000$ to $\$ 10,000$ in the country of final disposal and purchasers paying this price for an American car surely have a right to expect the same xefinements that they secure in the better class of European makes.
"Slipshod methods of doing business with foreign dealers are a thing of the past, as the dealer is more independent than he has been during the past five years and fully realizes that he now has other sources of supply.
"The important points are to first secure, and then through an unexcelled service to dealers maintain that goodwill so essential to foreign transactions, and to not lose sight of the fact that domestic and foreign trade each have their own problems and the letter cannot be successfully carried on through the same channels as the former but should be a distinct and separate department of the business, and headed by one who is schooled in export problems.'
in the combustion space would be two and a half cubic inches, leaving the combustion space eighteen and one-half cubic inches instead of twenty and raising the compression ratio from four to one up to four and a quarter to one.

Suppose the original compression had been higher, and many modern motors are close to five to one, then the volume of carbon would still be much the same and its effect therefore much greater.

Actually, a motor designed for a ratio of four and onehalf to one can be turned into five to one by quite an ordinary thickness of deposit.

Now a four and a halle to one ratio with a well dersigned motor should, at the most suitable speed give an actual wompression on the gage of eighty-five pounds per square inch and a motor with a five to one ratio from 100 to 10 , pounds. It only needs to be added that four and a half to one gives the kind of an explosion to suit an engine delivering its maximum explosion pressure at about 1, 100 revolutions, and five to one an chgine giving maximum pressure at 2,000 or over to make it quite wear why the former knocks when it is given an explosion pressure totally unsuited for it.

Of course there are some cases where premition lakes place from incandescent carbon, lat a motor hats (o) lo frimht fully carboned up before it will gon firing altor dow isnition switch is pulled, which is :man infallithe indi"ation of trok proignition.

## Electricity For Driving Automobiles is Just As Logical As For Supplying Light and Operating $\overline{\bar{M}}$ Machinery.



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are every day rendering to theit owners a higher percentage of service athl hwor cost of operation than cats driven by other motise power.


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## IS FORD REALLY LOSING?

Recent Price Cut Doesn't Mean Operation at a Deficit
Homy Fond lan found a way to strike a profitable lathace. His wesent readjustment of prices on the Ford line is: :lawn to have cmtailed him a loss of \$20 net on each man hime that the liord Joter ('e. is now producing, but his antice department production is based on a requirement of \$10 for rellacement pats fiom eath Ford car now running. Further, there has lieen and will lee no reduction in the price of rphacoment parts. Thus in stimulating the loss on first valcs, he enlages the maket for later proints. These facts were made plain in statoments br Ford executives before a graching of Ford dealers from the Carolinas and Virginia, gatlicied recently at (harlotte, N. C., and indicative of methods by which the Ford company is acquainting its trade of the inplus: to business which the recent price-cut was desimed to furnish.

That each car now leing tumed out is sold at a loss of $\$ 2()$ to the Ferd company was proclaimed by W. A. Ryan, who, as mannge of sales for the compans, naturally was one of the leading speakers on the program. The company is now hoducing 4, (100) cars daily, said Ryan, leaving it to his auditors to figure out that this means a loss of $\$ 80,000$ daily. Much of his message concerned some exceedingly timely advice to dealers about the value of being careful in the way that they handle nsed cars, particularly since the slump in used cair values that has been induced by lower prices on some new cate.

But it was from E. P. Hobart, service manager of the Ford crganization, that the trade learned of the silver lining to the Ford cloud. Hobart told his andience that Ford is making $\$ 165,000,000$ worth of parts every year for distribution throngh that end of the busincss. This, he said, was based on an average figure of $\$ 40$ per car, thereby establishing the rate at which it is figured Ford cars axe expected to wear out every year. Incidentally, some of the more statistical in the trade lost little time in figuring from the amounts given that 4,125,000 Ford cars now in commission must be the basis for the reckoning.

There will be no reduction in the price of parts, Hobart said. Increased freight rates and increased costs of rroduction make this impossible, unless, as in the case of the complete vehicle, Ford is prepared to stand a definite ratio of loss on each part. By producing its replacement parts in the regular line of manufacture, Hobart reminded the dealers, the company already is able to keep its costs low, and they get the benefit of this. The present lowered price on the Ford car, even with its attendant lose, Hobart explained, was decided as preferable to the greater loss that would have followed a curtailed rate of production.

Of the new car, concerning which the trade has heard but vaguely, Hobart added little of information beyond the limits of trade surmise. The new car will not be offered, Hobart explained, until space shall be found for its production.


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## U. S. EXPORTS STILL CLIMB

October Report Shows Tremendous Increase in Cars Sent Out

Statistics compiled by the Bureau of Foreign and Domestic Commerce on December 1, show tremendous increases in the volume of exports and imports of automotive equirment for October and the nine previous moniths of 1920. A total of 121,787 passenger cars valued at $\$ 139,(06,244$ were exported since January, 1920 as compared with 52,189 cars valued at $\$ 57,458,726$ for the same period in 1919 .

During October, 1920 11,562 passenger cars valued at $\$ 14,699,402$ were exported as against 7,898 cars valued at $\$ 8,634,965$ for the same month in 1919 . The exports of commerciul cars for Ocotober, 1920, amomed to 2,432 (:ass vilued at $\$ 4,018,126$, as compared with 1,301 citrs and in value $\$ 2,931,204$ for October, 1919 . The ten months' total for 1920 was 24,546 commorcial cars with valuation of $\$ 38,610,983$. The physical volume of truck shipments whe doubled, for in the corresponding period in 1919, 12,392: commercial car; were sent abroad with a valuation of $\$ 29.746,033$.
larts, not jacluding engines and tires for ()etober, 19) (), were valued at $\$ 6,910,538$ or about 100 preecht increase over the same 1r:ont of 1919, when exprots cotatled

## MOTORIZING THE BATH CHAIR





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FABRIKOID Auto Covering stands up permanently. There is no checking, cracking or chipping off. It is not dulled by the heat of the engine. It is immune to most accidents. Dents are hard to make and do not show up prominently.

All the rattle of the car is eliminated by the cushioning of FABRIKOID on doors, hood and fenders, etc. It takes the place of a hood cover during moderately cold weather.

FABRIKOID Auto Covering not only stands every test of travel and the elements, but improves steadily with age. It is perfectly waterproof and does not spot.

Your Garageman carries DUPONT FABRIKOID. Ask him about it. You can put' your old car into the shop and have it back within a week, wonderful in its superb and salient attractiveness.

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E. I. DU PONT DE NEMOURS EXPORT COMPANY'S FABRIKOID

FOR
KIANGSU, CHEKIANG AND ANWHEI

## Japan as a Motor Market

(Continued from Page 22)
msitecring methods in France, Italy, England and the Conited States.

Thw aned of additional highways for the direct connecti.n of cottain prats of the empire is most urgent, for it is of-times necessary to travel in almost a complete circle when guing hism plice to place. That Japan hos spent many million yen on roads is evidenced by the innumerable tunnels which tre moountered.

Two factors have militated against the autcmobile in Tapm-the lack of chauffeurs and mechanics, and the fact that the women will not drive. The Oriental mind is not inclited toswar? mochanies, so the development of capable chauffeurs and rejuir men has been slow. If once the actual driving and landling of the car be taken into considaration, the Ja!mere annot be impreved upon. Indeet, they seem to be boun to sit back of the wheel Also, they can take a car alart and put it together corlectly, but they experience the greatest difficulty in locating even the simplest troubles and in poperty correcting them. Consequently there is a crying need for good automobile mechanics in Japan, and a lucrative income awaits those Ameican shop men who have the gumption to make the trip.

Few, if any, women in Japan will drive a motor car. Japnnese women, of the class who can afford a car, are timid and backward, so this valuable woman's market must be forgotten by the dealer and manufacturer.

While the import tax on automobiles is 35 percent in Japan, this is no serious obstacle to sales, although those interested are endeavoring (and expect) to have it reduced. The same is true of the internal rate (a war measure), which amounts to 480 yen (about $\$ 240$ ) per car per year. These taxes are undcubtedly excessive and, perhaps, are an influence against the sale of automobiles, but their effect is counteracted to a large extent by the willingness of the Japanese to pay the price for that which he desires keenly.

Japan is a mountainous ccuntry, so a car to be satisfactory must have power and stakility above all else. By stability is meant freedom from poor workmanship and inferior material. A large percentage of travel is in first and second speeds, therefore the cooling and oiling systems must be right. The car should be as near fool ptoof as possible, with simple, accessible adjustments, because of the dearth of good mechanics. Four and five-passenger cars are the most popular, with a short wheellose for turning narrow corners.

There are not a dozen good automobile dealers in all Japan, in fact, compared with American standards, none of them is first class. They still have much to learn both in selling and servicing cars. Orie reason for this condition is that they are so far removed from the source of supply that the factories do not keep in close touch with them, and they have had to follow their own ideas and methods.

DUNLOP SCORES AT OLYMPIA
Special Wheels for Various Tires a Feature of the Exhibits


The new Dunlop giant wheel weighs $118 \frac{1}{2}$ lbs. as compared with 204 lbs. of a cast steel wheel

Occurying one of the largest stands in the gallery the Dunlop Rubber Company's exhibits, owing to their originality, diversity, and excellence, were among the most attractive in the tire section. Those who in their mind's eve bad limited the scope of Dunlops to tires and minor accessories only, were surprised to find that the Company specialized in rims and wheels as well, and in the display of those component parts was found evidence of the renewed enterprise that now marks the management of the firstborn pneumatic company.

Pneumatic tires, whether giant or pigmy, require speciaily made rims, and in their application to commercial purposes it has been found desirable to devise special wheels for them. In this development the Dunlop Company has taken a leading position. For giant pneumatics, a type that is destined to suploment solids for a hundred purposes, 'Smbons submitted cast steel wheels, in which the steel felloe provides the aim for containing the tire. A wire wheel, a new departure, is also smpplied for the airfilled giante, lightness and strength being its chief chameteristics. A silper coshom makes its fust apparance, a particulaly resilient tire for pasenger service, which will be hated by thoso who remain ecoptical abom air-filled tires for heavy loads.

After an examination of the antomobile sithation in the Orient, one womders at the domant attitude of Smerian manufacturess. Buring the mext five gears, stanting with the present time, Japma, (hima, Manchuria, Niheria, the Philippines and the Last Indies will absorb many thousands of cars.

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## NEW CADILLAC MAKES BOW

Model 59 Has Many Refinements Over Previous Model But Sarue General Construction

The Latest Carlill: Model 59


N
 new Model Sa ('adillace, since the gemeral make-up © this (al for the pat tew yeare hals frosen so satisfactory that ne radical changes are newestry. The ('adillace above all cars staod ont in the rongh usage given motiors duang the war. It hats lame a favorite make among Americans and other nationals and is: the embodiment of honest designing and faithful execution:


The engine is an cight-o linder T', with the same bore and stroke as its immediate predecessor, 80 by 135 mm . ( 5,429 c.e.), and has heen modified, in that the crankshaft is now Din. in diameter across the jomrals-an alteration which has contailed a comsidemble change in the crank case as well. 'I'he ecntre beariag of the oramkhaft, morevere, has been made longer.

A new and lig!tere type of dymatmoter is fitted, and is arranged on the same platform that accommonated its predecessor. The fan, which is drivan directly, and, therefore, has a spring held clutch to allow of alip, has heen rearranged so that the clutch and spring are neatly enclosed.

- It-will be remembered thet one of the characteristic
peculiarities of the Cadillac chassis lay in the fact that a charate water circulation sy:tem was provided for each cylinder blow, and that each systom had its own centrifugal water pump. Further to this, there was a small tank which condensed any steam emanating from the radiator, collected the water thm: obtained, and returned it to the circulation system. Thermostats governed the flow of water, in accordance with the temperature attained in the cylinder jackets. The srstem remains unaltered, but the condenser now is placed underneath the valance on the right-hand side of the frame, in a position where the stream of air passing the car plays full upon the tank, and assists to condense any steam which may be contained therein. The water filter is now in the illler tube, not in the base of the radiator.

Apart from the engint, the frame has undergone some change, the maximum depth being maintained further fore and aft to make the side memliers even more subtantial than they were bofore, while the flanges are widor and the whole frame is stronger at the forward dumb iron end, at 'which point also it is cueved rather more, bringing the dumb irons and pring eyes to a lower pesition.


Tilting hewllights are a feuture of the Cadillac
In a way, the greateot visible change concerns the body, which is not coly larger and more commodious, but also much better finished, the paintwork being picked out with

## -the sign of wearing brakes

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ERY out-thrust arm means wear. Brakes last longer with Johns-Manville asbestos brake-lining.

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 Tい 1!



On the recent ENDURANCE RUN from Los Angeles, over two mountain ranges, to Yosemite Park, Cal., U. S. A., a stock car covered the distance of 355.5 miles averaging 20 miles to the gallon and used only $\mathrm{I}_{\frac{1}{2}}$ pints of oil.

> Also Patterson 6-cyl. 7-Pass. and Crow-Elkhart 4-cyl. 7-Passenger Limousine in Stock Dixie Flyer 4-cyl. to arrive shortly Complete line of Tires, 0ils and Accessories carried
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## BRITISH INTO U. S. MOTORS

Recent General Motors Deal Involves Large English Companies
The Alorgans and duP年ts together were responsible for lringing British and Canadian investors into (ienemat Motors. The Morgans, with a house in Jomblan, always have been cloce to Pritist capital and the dulonts were brought into contact during the war'with Explowives, Itd. of I.ontion, and C'andian Explosives, I.td., which also were engaged in the manafacture of munitions.

At the elost of the war the Tritish compme: following the example of the duPonts in General Motors, decided to enter the field of tramspestation. The first stop, in this direction was to acquire substantial holdings in the Dunlop Rubber ( $o$. of England, the lealing tire concem of that country. They also entered the Canadian and British hranches and then the American bunlep (oo., which will scon get into production in its $\$ 1.5,(1), 000)$ fortory at Buffalo.

Explosives, Itd., alro owns or controls Sumbean bice: cles and motorcccles, the Rotax Motor Accessories Co. Kyncek, Ltd., manufacturers of bieyeles and motorecters, and the Britich l'musian ('o., which makes articial leather used in upholstering automobile bodies. Its investments in General Motors constitutes only alrout 2121 pencent of the total capital of the American corporation but it is sufficient to establish intimate relations between them.

Air Record is Broken<br>(Continued from page 14)

culty in getting started, made a short flight and returned to the field.

The race marked the first public appearance in America of two new types-mene represented by the Verville Packard and the other by the Loening Special, a monoplane with a wing-spread of only 29 feet. The latter was the only machine to present any strikingly new features-a wing with a negative dihedral angle, the first time that this innowation in construction lad ever been flown. For two lans this little machine, with a $300 \mathrm{~h} . \mathrm{p}$. Wright motor, ged acond the course on even terms with the Thomas Morse, lut on the third lap, one mile from the finishing point, a water conncction broke and Lieut. Bradley of the Navy, who was ecting as pilot, was compelled to drop out of the race.

A technical question was raised by the comparative performancors of the Terville Packard and the Thomas Morse. Here were two machines, one having double the motor lorrer of the other, and yet in a 132 -mile flight, the Thomas Morse's claysed time was within two and one-half minutes of the Terville. It naturally raises the question: At what point does power as applied to the airplane, cease to aid in efficience? We had motors of $300 \mathrm{~h} . \mathrm{p}$. and less making a compratively better showing than those of 400 and 600 h.p. Of course, there is much that can be said in extenuation of the Packard 600 ; it was and is still an experimental

NEW LICENSES FOR GREAT BRITAIN Display of Card at all Times in Metal Holder Required by Regulations

Under the regulations promulgated by the Ministry of Transport, the new British license card, illustrated herewith, came into effect on Janury 1. The cards are iswued in two forms, one circular, as shown, and the other rectangular.


The actual size of the card, the circle cnly shows in the frame A holder is required for the card which must be carried on the near side of the car or cycle, only the circular pat of the license showing upon which is listed the horsenower, seating capacits, weight, class, make, color, (ar mumber, duty, date of issue, and the date of expiration. The ammual license is bilue and the quarterly license for the first quanter of 1921 is yellow.
motor. In France, the difficulties encomotered by Major Schroeder lay in its inadequate sratem of radiation-the same difficulty that presented itself in connertion with the development of the Curties Twelve, a modification of the Kirkham Twelve. In the Pulitzer trophy race, the same difficulty was encountered although in a lesser degree. Howerer, instead of tuming im 1900 s.p.on., as it is: slypused to, the best that ('ipt. Mostey could iget was 17010 . Is at result of the trouble concombtered, for mathime will ber
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[^59]
## CHINA HAS FIRSTENDURANCE TEST

## Overland Stock Car Stages Non-Stop Reliability Run

By Upton Close
AND
A. L. Meyers


Start of the 4.8 hours non-stop rim

The progress of the motor-car industry in China has been very concretely called to attention by a scientificallyarranged and professionally checked-up endurance test, carried out with the objective of establishing a reliability record before the eyes of the prospective buying-constituency of this field. It has been almost a matter of months, rather than yeans, since the motor car was so new to China that all the prospective Chinese buyer demanded was that it be self-propelling, have a shiny exterior, and a loud horn. That that buyer has now hecome so discrimiuative in regard to motor and bodies, endurance and mileage, and the comparative qualities of various makes, that it pays a large selling agency to stage a non-stop time test as a sales promoter, indeed merks a step in the appreciation by the Chinese public (it must be remembered that in North China, at least, the sales are prepondermity to matives) of the true meaning of a motor.

The endurance test was carried out by the Peking agency of the China-American Trading Co., Inc., North China agents for the Overland. The car is remesented in the Central China temitory by the Central Garage Co., Shanghai. Major ('ybl Pattenom, one of the Vakems airplane pilots, who is an instuctor in the aviation shool at Jeking, and who bas bad long experionce in motor-cal endurance tests and races on Britioh and Fincolem 1rask between the years of 1910-1;3, fithed the a all on its forteight hour non-stop rum over the Wiedern llills cirenit.

Major J'afterom, Who in mite of bis momdo, is a


 Thumeday, November 4. 'The weather was ideal low sum a test, being claw and cold, and apmonimating the lows-
ing-point at night-more ideal, however, we can imagine, for the motor than for the driver. The Western Hills circuit is $261 / 2$ English miles long, if one does not come within the walle of the city. This is the longest circuit of made road in the vicinity of Peking. The route taken was: Hsi Chih-men (Wesit Staaight (iate) to Jade Fountain $91 / 2$ miles.

Jade Fountain to Golf Course (over the loop in the hills which covers several five percent grades) $101 / 2$ miles.
(iolf Course to Ping (hih-men (bottle catel io miles.
Bottle (iate moth to West Stmaght Gate alome the outwide of the sity wall (road lad and cownded, patmed with ancisont stone slatse of miles.

Added to this is the distame of !!! mile- thameh the crowded streets of the west city from the Peking Hotel to the West Straight Gate, covered at the start, and the 4 !
 which manked the final -tweted.
















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It is always bought because of its known value and its after economies.

The gasoline consumption is unusually low. The tire mileage is unusually high.

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## ASTOR HOUSE HOTEL, Ltd. TIENTSIN

The leading Hotel in Tientsin, delightfully situated, facing Victoria Park, and located in the Centre of the Town's Life and Business.

[^60]frimble not ascured as to what atiitude the metropolitan police would take towards the "stunt," preferred to remain on the side-lines as ohservers. In spite of much (cmmiseration for the "Poor Major, out there running around the hills in the freezing night," Patteson came through the ordeal with scarcely a tired look. His wonderful endurance is proved by the fact that he stopped only once on each third lap, or thirteen times in all during the two days and two nights, his stops running from ten to thirty-seven minutes and averaging less than twenty minutes, with one extra stop of nine minutes thrown in for replacing a punctured tire, which he did himself. The puncture constituted practically the only "bad luck" of the test. The driver took no sleep and no stimulant aside from tea and coffee, and took only light nourishment. He states that this run was no test of his capacity, as be has done fifty-six hour runs of the sime mature in Europe.

That the metcr stocd the fourtr-eight hour grill so well, even taking the grades on "high" ur to its last lap,


Topping the grade of the approach to the Western Hills
occasioned less surprise, as the apparent confidence of the promoter of the test led to the general expectation that it would come through with colors flying. At the finish at the Grand Hotel du Pekin Saturday afternoon, November $\ell$, at 3 p.m., the car was in perfect running order. It had covered nine hundred and sixty-nine miles and, if ancthing, was in better running order than it had been at the start at three o'clock on Thursday afternoon.

When Tajor Crril Pattow arrived at the Grand Hotel du Pekin at three o'clock and stopped the engine of the Overland " 4 " for the first time in forty-eight hours, he was greeted ky a large number of friends and motor enthusiasts, who congratulated Major Patteson upon the feat accomg lished.

Arart from four hours spent in either changing judges or paataking of refreshments, Major Patteson drove continuouely and has set a record that will stand for a very long time in China. The 969 miles covered were over roads of the most gruelling type-the lap being the roads linking the Jade Fountain Hotel, Pin T'ze-men, Hsi Chib-men, and the Summer Palace. Thirty-five such
laps, each being a fraction under twenty-seven miles, were Rooms, the starting point, to the Jade Fountain Hotel, and from the Jade Fountain Hotel, after the completion of the thirty-fifth lap, to the entrance of the Grand Hotel du Pekin.


Passing the watch tower in the Imperial Hunting Gromnds
The gasoline consumed was slight, being $38 \frac{3}{4}$ Imperial, or $46 \frac{1}{2}$ American gallons, the average mileage per gallon being (American) 20.85. A total of one and one-quarter covered. The remaining mileage consisted of the runs from the China-American Trading Company's Show gallons of lubricating oil was used. The mileage per gallon, considering the number of miles covered, was excellent.

The average number of miles covered per hour was twenty and three-sixteenths miles. This figure does not include deduction of the four hours of stops, when the car was at a standstill, though its engine was kept ruming.


A fine stretch behind Jade l'ountain I'arli
The avorage number of miles per hour, after deducting the four hours, would be twenty-two miles.

The fastest time per laf was fifig-five minuter, an average of almost a mite in two minutes, the skowest being minety-three minutes, including at delay of nine minutes Hent in removing a pamefured tire and chmping amother in its place. As the hable bolow will foow, the : memane time per lip, was seventy-two minntes. The contries in the "Official Theg" of the test were matce wer the simnathes of the judges, Messts. IV. J. V. liuseell, I'. limmicy-

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THE ORIENTAL MOTOR ATTENDS THE OLYMPIA SHOW


Arrow indicates THE ORIENTAL MOTOR in the exhibit of The Colonial Advertising Co., British representatives

Willians, W. H. Tolland and Robert Lrons. The timekeepers were Messrs. R. W. Richards and F. W. Jones.

All stops were made at the Jade Fomitain Hotel and all entries of time per lap were made at the Hotel.

For those technically interested, the official log is as follows:


No edjustments were made to the motor during the entire trial.

This test, although neither greatly spectacular not es,tablishing a record for the car used, a sixty-hour non-stop run having been recently made by the " 4 " in South Africa, is worthy of note as the first thing of its kind carried out in China, which, before many moons have fassed, will undoubtedly see as keen a competition and as various methods used to capture the public eye as are in vogue in the motor trade anywhere throughout the world. Indeed, such a test would have been impossible until very recently, there having been no roads in the country upon which it could have been conducted.


Finish of the run-Major l'atteson, the driver, in the foreground
The Chinese, as well as the foreign press of. North China, took keen intenest in the test. There is no doubt but that it will do its part toward "boosting" motorcare;

## N．J．STANDARD LOWERS GAS PRICES

## General Movement of Gasoline Prices Downward Expected in U．S．

At the side of the hig industrial orgnization：whioh get proclaiming their anxiety to help in restoring a more normal level of prices in the Tnited States，the Standard Oil Co． of New Jerey rerently tork it stand．This（0）川＂my， and the Standard of Lomisima，Jed what is expected in some hopeful guaters to lerome a genema mosemem ot gascline puices downwand in Amaisa，since the macio movement was almost purely a nominal movement．In territories controlled by these two comparies the trade now pays a cent a gallon less for its gasoline than it did in November，which means，as one calloused observer rointed out，that fuel is now only ！our cents a g． 1 lon highe： than it was in January，1920．In reducing prices the com－ pany expersly disclains any ahor motive for domy ：－ than its desire to adid in ：a nestomation of what are＂pman considered＂normal prices．
＂While there has been no material relief，＂says the statement，＂from any of the conditions whish hompht at wht the rise in the price of petroleum products，the Standard （）il（＇o．（New Jereer）lelieves that the pros．（ff redjume ment now under way in the business world must eventuaily ecntribute to lower costs of producing anl reîning oil． To date there lass leetn no lowemian of lat or mot－mos and oil prices，nor recession in the demand for gasoline．Re－ ductions which have already taken place in many of the grincijal items entering into the cost of living hate， 1 ， the most part，not reached the ultimate consumer，but－it is inevitable that，lefore long，lower picco will he l immoht about by new quotation：now pevailing in frimat mutate． The Standaid Oil Co．（New Jerser）believes that this wovement wand a testonation of What ane puplanty（on－ sidered nomal prices，should be aided he the oil indu－try

An important factor in the present reduction，aside from the seamonal silarkening in the demand，is Hat the produc－ tion of light oil in the l＇med statee bas heen in reatine
 stuation，compled with increased treight batoo，i：cancill： indejendent refiners in the mid－continem di－11i－t t．）wher gasoline at two to four cents，gold，a gallon reduction．
and the inevialle complement，kads，in lhi－－ation al the country．With the good roads fever greading like con－





 as the amtomotile is comberme


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SDECIAIITIEN．

[^61]

II IS A LITTLEE DIFFICOLL'T to keep tack of the nomenclature of the Morris light cars. The original $191+1(1 \mathrm{~h} . \mathrm{p}$, , lovingly remembered all ares


Provision is marte in the ". M-()" for altering the relien of the stereingt

the kingdom as the "M.().," and as the "revient" shali engine ever sold to the public, gave place, $m$ 1915, to the first Monis-cowler, wheh was an 11.9 h .p. on much huger

lines, and built largely of parts designed in England but made in America.

For 1920 a single chassis forms the base of both the "Oxford" and the "Cowley" models; the Oxford is the "de luxe" edition, fully equipped, and turned out either as a two or four-seater; the Cowley is a cheaper model, two-seated, with smaller tires, no electric.starter, Magdyno lighting, and other economies.

These notes refer to the 1920 Morris-Oxford, which is now listed at $£ 590$, and is an altogether larger and better car than the 1915-1919 Morris-Cowley, which it roughly resembles externally. So far as we know, it is wholly constructed of British-made parts, though, like its predecessprs, it is assembled from components that are made by specialist firms.

When delivered, the engine is distinctly stiif, as the bench and road testing are cut down to the inevitable minimum in order to give the purchasers maximum value for money. If the car is delicately handled for the first 500 miles, the engine grows daily more lissom, its performance improving with every mile. On the road the first contrasts between this car and its Monis-Cowley ancestor of 1915 relate to seating and cooling. The body is a great deal larger, and accommodates four full-grown adults in real comfort ; the front seats are not integral with the sides of the body, but are bolted to the floor, and can be shifted if desired, though not instantaneously.

# DENNIS VEHICLES 


are made of Beffer Material-Give Better Service - Cost Less per Ton Mile - and altogether achieve a higher percentage of efficiency over a given period.
THAT IS WHY you should Purchase a good Vehicle.
2 and 4 ton Chasses now in stock

The suspension of a car makes or mars it in these days of often execrable roads, and in this respect the MorrisOxford claims unqualified praise, being quite superbly sprung. Moreover, its gaitered leaves retain their efficiency as the car ages. Being a light car, careful attention to the tire pressures is well repaid, but if a careless owner inflates his tires to absurd hardness, the riding remains better than the average ; and at correct inflation the vehicle runs beautifully.

So far as speed and climbing are concerned, the performance resembles that of the old Morris-Cowley; an 11.9 h.p. could hardly be better. The normal speed of the car with four passengers on the level is in the neighbouhood of $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Nearly fifty is obtainable if required, and bottom gear is seldom demanded on main road hills.

All parts are thoroughly accessible-brake adjustments, carburetter jets, magneto contact breaker, dynamo commutator, ete. The Lucas dynamo protrudes thongh the ramp just in front of the eentrab control levers. It loaks. queer, but is far more get-it-ithle than the arepage, and occupies space which would otherwise be wathed.

Ingenious frovision is made for the meme renondits adjustments - the mest of the hewel drive, cond-plats on He camshaft, commetting rod bushes, wh. 'The mlimer head

 owner-divers, and is well mated for tho womads owner-
driver, who may reside hundreds of miles from professiomel aid.

The car may be summed up by the ready admission that it is an atsolutely first-class example of what the ownerdriven light car should be. Its performance is just about as







 11:01! shanelat.


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## AKRON＂BIG 3＂CUT PRICES

## Goodyear，Goodrich and Miller Make Reductions in Tire Coats

Tire reductions ranging frem ：3 to $\geq 0$ percent have been fut into effect by the Goodyear，Goodrich and Miller com－ panies，the Goodrich prices going into effect coincident with their announcement in early November，and the Goodyear wh Niller hecoming effestive November 15．Every tire manufat ther in Akom，the tire making center，is expected to join the lower price movement within a week，indicating that the long expected break has arrived．

Greatest reduction among the three companies bas hecm hade by Goodrich，the cuts including all tires，both pneumatic and solid，and tubes．The general decrease to 1．）percent and in some instances approximates 20 percent， de］ending uron the size and constuction．

The Goodyear cut is not a flat reduction in all sizes but reaches 1ŏ percent at its highest point．On all weather troed cord casings the cut is $7 \frac{1}{2}$ percent， 10 percent is dropped on straight side fabric all－weather casings，and irregular reductions ranging from： 3 to 14 percent on clincher fabric tires．Rubber tread casings，both cord and clincher fabric， now list at the same price as all－weather tread casings ex－ cept on the $30 \times 3 \frac{1}{2}$ clincher cord casing．Extensive im－ provements have increased manufacturing cost on this tire， officials say and no reduction is possible．

Regular tubes are reduced 15 percent and heavy tourist tubes in percent．There is no reduction in price on＂tire savers，＂repair material or motorcycle casings or tubes．

Miller decreases range from 3 to 1s percent．On cord tires the reductions average 12 percent and from 10 to $12 \frac{1}{2}$ percent on fabrics．Tubes have been cut on an average of 1．）percent．

The exchange situation，however，will prevent China and the Tar East from having any appreciable results of the price cutting．

Crude rubber prices now have reached the lowest levels on rerord．It is now selling arcund 20 cents a pound，as compared with 55 cents before the war for plantation．Con－ ditions in the market are chaotic and have developed furious queculation ly ouisiders．Estimates of the stock held in the L．S．place it at about 15,000 tons，or twice the supply． usually on hand at this pericd．The industry was under Government control during the war and for that reason did not receive the same impetus as other industries，but it shared in the general inflation which followed the armistice．

Tire manufacturers had bought heavily and when the slump in business came they faced an urgent need for cur－ tailment，hut they did not attempt to get out of their con－ tracts．They merely requested the rubber dealers to hold the commodity for future instructions，in most cases agree－ ng to pay the carrying charges themselves．This is one of the brightest features of the muddled situation．The Ajax Rubber Co．，Inc．，reduced its prices 10 to 15 percent，

Good Roads Movement World-Wide (Continued from Page 54)
the market towns and provincial capitals. At a cost of
 faced rads, while another 100 , ofof miles of less impontant roads in southern and southerest ('limas conld bre moternizel

 cum. The work on hetter highwas in ('hima is lacionnine in and aromad the capital. The (iencommen i batheme an
 motor transport is available wherever the mas imprewternent


 rapid transport. Here, as in many other countries where some attention is given to betteming the highways, fhe for-1
 trucks, rendering' a speedy and dependable service much appreciated by the citizens. While $£ 100,000$ a year was spent on maintaining the loads of South, पfrica lofore thoe


 roads at an even more rapid rate than in pre-war times.

The avesage citizen of the combtrice. of the word i-
 atere definite rehationdlij) tos hise eret c. living. Ife i-
 for road work is eventually retmoned many foll in den rasal costs of farm produce and in lowering of all transontation charges in which he has a distinct slatre. This is whe ber

 why he will continue to demand these appropiations mitil they ane made.

PENNYSYLVANIA LIKES THIS ROAD SURTACE.

 surface extremely eatisfactory on main traveled roads.
 and there forts stome. 'The highway is right in li... himh :1t the side and is wighteen ter wide.

- fferetive Nomomber 11. Ther reduction wat mad , Par.



 N. J


 capacity.


## NOTICE

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The Auto Castle, \&ulien Heimendinger. Shanghai, January 15th, 1921.

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STREET CARS NEED GREATER SPEED<br>American Journal Advocates "Pepping " Up to Solve<br>Transportation Problems

Street railways are having their troubles in these days of rapid transportation, and convenience and necessity have replaced many electric lines with motor transports because of their ease in handling and their low upkeep. The latest suggestion to the street car transportation companies is that made by an editorial in the "Electric Railway Journal" of the United States, which advocates more speed. The advice given below could be most profitably taken to heart by the street car company of Shanghai, which in comparson with Osaka, Manila, and other Far Eastern cities has a service that moves at a snail's pace. Traffic problems would also be brought nearer a solution by such a move. The advice given is:
'When we read of Ralph de Palma going four hundred miles at the rate of eighty miles per hour we inevitably compare this with some speed experienced by ourselves in an automobile or train, and then there wells up in our minds an envious desire to emulate de Palma and experience his sensations as we conceive them. The American, thank heavens, likes speed. Why not capitalize more on this? Speed is a panacea for many railway ills. Earnings depend on the car-miles, but expenses, on the other hand, depend on the car-hours. If each car-hour can produce more car-miles than now, expenses are relatively reduced. High schedule speed possibilities are at the base of the street-railway structure. To increase schedule speeds involves such factors as rerouting, better track and rolling-stock maintenance, double berthing, improved loading methods, use of skipstops, signals, traffic regulation at street intersections, etc. It is not idle to predict that the transportation agency that offers the highest speed service will predominate in the future, and we believe that the possibilities of higher schedule speeds are not fully realized in the street-railway industry. Inherently the street-car is capable of a schedule speed comparable to that of a private automobile due to its quick acceleration and the ease with which it is controlled, and it ought to be possible for the street-car to attain the same average speed in city traffic. It is to the traffic experts to give the vehicle opportunity to realize its speed possibilities. There is no fundamental reason opposing the speed increase, and we venture to say the present rate of speed is due only to the fact that the transportation, like Topse, just gromed without any determined or intelligent effort to shape its growth as a coordinated unit that involves city planning, pedestrians, automobiles, streetcars, and everything that makes for congestion of traffic on the surface of street.s. The heard a railway manager say the other day, 'With just a reasonable degree of effort and at but little expense we increased our schedule speed in the congested districts from two to six miles per hour.' The point is, higher speed is possible. Furthermore, it is a practical means of meeting jitney competition. Finally,

# 1920 RED BOOK PUBLISHED 

## Motor, Marine and Aircra't Annual a Mine of Information for the Trade

A mine of information for the automotive trade and for the layity, having a natural bent in that direction, is furnished by "The Motor, Marine and Aircraft Red Book for 1920," wbich has just reached China. The annual is issued by the Technical Publishing Co., Ltd., 1 Gough Square, Fleet Street, London, E. C. 4.

The content of the book is naturally confined to the British Empire but occasional notes of interest to the readers regarding export trade are given.

The work is divided into fourteen sections. Section one deals with motor cars and cycles cars, giving prices, duties, specifications, number of models and other information. This section includes all of the principal makes of cars in the world. Motor cycles, scooters and attachments, with much the same information as in section one comprises the second section. Section three is devoted to commercial and agricultural motors and electrical vehicles. Section four combines marine motors, engines, and waterways and harbors. Aircraft, airplanes, seaplanes, and balloons are treated in section five, Section six is the accessory department, embodying special discussions of high tension magnetos and electric lighting and starting units. War and general legislation and licensing occupies the discussion in section six, and government departments section eight. Section nine comprises lists of associations, clubs and the motor press, the overseas publications such as THE ORIENTAL MOTOR being included. Section ten is motor literature, the press of the British Empire, techincal books, etc. Section eleven lists motor manufacturers and dealer's other than those of Britısh nationality. Section twelve deals with motor interests and firms in the dominions. Section thirteen contains the directory, buyer's guide, etc. Section fourteen is the index.

The annual is carefully compiled and is of value to all interested in the automotive industries. Foreign trade is given its proper consideration, making the work valuable to all nationalities. Careful editing and adequate preparations are evident. The annual sells at s.2 shillings, post pait.



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THE EMPEROR OF JAPAN GOES IN FOR MOTORING


A Daimler "Light Thirty" recently delivered to the Emperor of Japan. The body is imperial red with gold liæ̈ s

## U. S. CAR IMPORTS GROWING

## High Priced European and British Cars Coming In

Revival of foreign competition in domestic markets for alutomobiles of the L'nited stater is learis imat..nt in the import statistics compiled by the Bureau of Foreign and

 thow matked increases in the volme of foreion -himerato.

During the nine months of the calendar rean jon-t a ant 776 automobiles were imported into Amerjca. Their declared value amounted to $\$ 794,910$. These totals represent a remarkable increase as the 67 automobiles brought in during the correponding fericd of 1919 were valted $\$ 36,677$. Of the total for 1920,201 cars with a valu:tion of $\$ 191,707$ were imported during September, as compared with 10 cars valued at $\$ 9,674$ for Septcmber, 1919.

Automobile parts, except tires, imported during September, 1920, were valued at $\$ 185,555$, or double the import for the corresponding month of 1919. The nine months' parts total for 1920 amounted to $\$ 935,91$, , or about eight times the value of foreign-made, autcmobile parts iori the same period last year.

The stati-tical exhibit of the I'nited Lute (iveramem does not attribute the canses fir the leturn of 4.3511 antomobiles valued at $\$ 7,196,283$ to that country during the first nine months of 1920. It is believed that many of these cars were omned in the allu! Then, thete are instances where re-shipments of American-made cars have been included in the-e figure-.

During September, 1920, 302 cars of American manufacture, with a valuation of $\$ 391,170$ were returned, as
 ponding month in 1919. But, the nine month- atevioute of returned cars in 1919. conly amomited to firij) can - vallued at $\$ 1,014,978$.

## JUDGEMENT GIVEN IN SINGAPORE CASE

## Motor Transport Co. Pays for Accident

In ation in which Th. Hug? Peck, a mane engineer, of the Straits Steamship C'c., Ld., claimed $\$ 22,200$ from the Abrams Motor Transport Co. was tried recently at Singapore by Mr. Juctice Sproule, acting Chief Justice. 1', inaff dained damages on accunt of injuries he sustained in an accident shortly after midnight on March 10 and 11 last. It was alleged that he was getting into a motor-car real Johmaton's Tier when a car belenging to defendants thied to pass on the near side of his car and ran into him. 1- a rewult of the accident plaintiff states that he is lame in are leg and also sufters fiom tiequent headaches which may incapacitate him from continued residence in the Straits. The Judge found in favour of the plaintiff and awarded him slo, ofo Straits currencr.

## General Motors Control Passes

(Continued from Page 73)
figures. It is expected that the powerful influences which now control the company will be able to force the market price up to a point high encugh so that subscribers will complete their payments rather than forfeit the amcunt already paid. Fieceipt of this enormous amount of cash at this tinue will place General Motors in a pesition so impregnable that the present slump in the industry can be regarded with more or leso indifference

Of the $20,101,658$ shares of commons stock of no par value, issued or to be issued, 15,699,091 shares were offered for exchange en and after May 3, 1923, for outstanding conmon = hanes of $\$ 100$ gar value on the basis of ten shares of no par value =tock for tach slare of $\$ 100$ par value.


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## 9 NEW "WRINKLES" IN THE FIELD OF ACCESSORIES



Lodge Spark plugs are
back in the China field

The Best mechanical autornutic oil pump is becoming popular with motorcyclistsandsmall
cur owners in Great Britain


An accessory for the windshield consisting of a third glass shade for sum, ruin. "hunt snows, is shown at the left

Radium faces have found their way to the speedometer. The one shown on the right is of English manufacture


Supplying the leaves of a car spring with better lubrication is the function of the leaf insert shown. It is accompanied by a special force gun for feeding oil


Terry's motor car spring shock absorber as shown at Olympia


- Suck in the Bor" is now a new and ingenious motor car jack


This electric hand warmer is attached to the wheel just where the hands fall


This motor car warmer of the brick composition type has warmed feet fur several years. but now the mama. facture suggests placing it under the hood, as illustrated to the right, on cold nights or in unheated garages. There has been some question as to whether this would eignite the gas tank but it will not


## U. S. BUILDING SCCOTERS NOW

## Light Motorcycle Said To Be Gaining Popularity

Bettor transportation which means independent or individual transpatation, hes become one of the vital needs of the day. Pecple have long endured the uncomfortable and uncertain street cars as a necessary evil, but the almost universal increases in fares and the deteriorating service have started a lot of thinking. : As a result, the working and professional men and women are in a decidedly receptive mod for a light, dependable and


The latest American offering in Scooters economical motor vehicle, which will comfortably, conveniently and expeditiously carry them about town and to and fuctn work. The latest offering in this line in the United States is the Briggs and Stratton Motor Scooter, and judging from its reception in Chicago and everywhere shown in America this outfit is destined to wide popularity. Scooters are now aprearing on the streets of Shanghai.

The light weight of the Motor Scooter, ( 100 pounds) and the lower center of gravity make it easily handled. The double-spring post mounting of the saddle and sprung footboards make aiding very comfortable.

Cleanliness is another commendable feature. All of the working larts are enclosed, which keeps in oil and excludes dirt and grit. The motor and exhaust are safely away from the rider, the whole powerplant being mounted in the rear wheel.

An average gatoline consumption of one gallon per 100 mikes is another strong talking point. The total operating cost will undoubtedly average less than one-half cent per mile.

The Motor scooter w ill (:limh any hill that an antomolite cam pull on high gear. Its epeed ramge is from theme
 The controls are centratized in a simgle thotle lexem on the aght handle bar and to facilitate startinge a comprestom release is mounted on the left bar. The positive batie is astuated by a kever of the sight fooblomat, which operates a brake slone agamet the flywed.

The frimey al constamention features ate exdent from the illustration. 'The power-plant is Hoe standardized Briges and Stratton Motor Wheel which has been dereloped to a high state of dependability and serviceability.

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## PRODUCES SIMPLIFIED CYCLE.

British Aircraft Designer Perfect New Style in Motor Bikes,
II 1.1 dince or mother, the columns of the majority f | fullit fik. doaling with motor-eysling have contained lack her the evolution of a makhene, the desjgn of which will cminate at Irge mumber of luilding operations as comfored with the consentionall type, os that the final cost may I.e uduc: d in onder to :low the complete motor-cycle to 1.e wetailed at al fice mithin the reath of a much larger section of the pillit than :ure the more orthodox machines. It the :ann lime the new derign must embody in its


The P'etross simpilifiod cycle
specification those components which have been proved by experience to le ersentiol for everedey work. A new motor-e ycle designod lir J. A. Peters, 28, Tictoria Street, Tondon, an aincuft dezigner, now apparently conformes to the needs, which hate just been emmerated. Its appearance is distinctly pleasing, although the design is decidedly unconvention: , for there is no frime as is usually (m)den-tcod ! that tam, its face being taken by the tank which is pressed in one piece from sheet steel and aiter-ward- welded. The engine itself also forms a part of the frame, the cylinder head being provided with special luge for attachment to the main tank at a point immediately belcw the oil tank. The part sectional drawing of the main tank shows clearly the lugs at the bottom of the oil tank. and the mamer in mhinh the stresses are transmitted direct to the top of the head of the machine. By utllizing the tank as the main frame member, great strength is secured with but little weight, the complete machine in this instance, ready for the road, scaling but 140 lbs ., and this with a $3 \mathrm{~h} . \mathrm{p}$. engine. A compact springing device is fitted fore and aft, the rear consisting of coil springs arranged to give a "omblhing" action both ways, and totally enclosed. These springs control the movement of the rear portion of the trame. Whi his suitably hinged at a point immediately behind the power unit. Particularly ingenious is the spring of the front forks, consisting as it does of a substantial leaf swing fitted inside the 3in. diameter steering head, the forl: laden heing linged at the crown, thus being free to move up and down, and hub of the front wheel following a path forming part of the circumference of a circle with the hinge as center. This movement is controlled by the leaf spring, and gives smooth riding. On mounting


A propellor furnishes the power for this small car, which is gearless and fitted with a twin cylinder motor. It takes on runners in the winter and becomes a sleigh or ice boat. It is the work of an American designer who lists it at $G . \$ 175$
tho machine the whole frome sinks about two inches, and when in motion a sense of "floating" is exporienced.

Working on the two-stroke principle, the singlecylinder engine, of 70 by 77 mm . bore and stroke ( 296 c.c.) is rated at $3 \mathrm{~h} . \mathrm{p}$, but is carable of developing considerably more on the lionke. The lar-ont is clealy shown ly the sectional drawing, it being observable that yoller big end and ball main bearings are incorporated, Special lugs for attachment to the main tank are seen cast on the heard, while the crank-case has the engine plates cast integral for attachment to the saddle tube. A single-lever carburetor, controlled ly the right band twist gilip supplies the explosive mixture, and he magneto is diect driven. The left hand twist grip operates the decompressor. An ingenious syem of atomatic ciling is comployed, in whi:h pressur focm the exheust is: led to the oil tank, whers it forco (il up one lag of a cybon pipe fitted with a necalle valye, for contiolling the flow, at the top. The oil, jifter passing this valve is fed by gravity to the hollow gudgoon pin, lokricating the small ond and cylinder walls, the smplus falling into the cramcace and ciling the lig-end and msin baninge. Immediatoly the engine starts the flow oil comenencos, and on stop)ping the ongine no forthor prewro is smplicd and a vont in the tol of the sphon prevents funther functioning
$\Lambda$ silencer is formed in the movalide rear protion of thas frame, and the oxhoust gives are led from the exhanst pot to this silen er by means of a he sible pipe in order to allow
 gears and to dampout the road vibnations.

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# THE "FIGHTER-SALESMAN" 

(Written especially for The Oriental Motor)

The world wide industrial depression has brought about one good result, namely, the development of a new type of salesman. He is known as the "fighter-salesman."

Previously, there were several kinds of salesmen, and as a general rule the less they knew about salesmanship the bigger the titles they carried. We thus became fairly familiar with such high sounding phrases as "sales engineers," "directors of distribution," "merchandising counsellors," and so forth. It got so for awhile that a great many of the men who followed the good old calling of "drummer" seemed to think they would lose caste if they allowed themselves to be designated by any except the new, hifalutin titles.

These "sales engineers" and "directors of distribution" were all well enough when the demand for goods was greater than the supply. How smug they were as they leaned back in their swivel chairs and kidded themselves into the belief that the wild clamor for their products was wholly a tribute to their own allpowerful personalities!

Sales engineers-fiddlesticks! They were neither salesmen nor engineers. They were sitters-in at "conferences," and that's about the only thing they were really proficient in. Nine times in ten, when you went to call on one of those birds, no matter how legitimate your mission, you were told by the office boy or the telephone girl that he was "in conference."

Sure he was-in conference with his own egotism, or else figuring out some new way to pass the buck if any real responsibility should happen, by some mischance, to come his way.

It was only when the people quit buying, thus making it necessary to really sell goods, that the real salesman came into his own.

Fortunately, there were salesmen capable of meeting the new suitation, and these chaps, for the reason that their technique, was so clearly apparent and so closely akin to the methods that won victories on the battlefields, became known as "fighter-salesmen."

They sell goods by fighting the resistance created by the aftermath of war. They fight back the tides of gloom which in these times sweep over weaker men. They are the up-and-at-'em boys who never say quit.

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# ORIENTAL MOTOR 

A Monthly Magazine devoted to Motor Interests in China and the Far East Generally

## THE FAMINE SPURS ROAD CONSTRUCTION

## One good result emerging from the welter of misery and suffering in the devastated area of North China

## Written for "THE ORIENTAL MOTOR" by Upton Close



Road building in the famine district of North China, under the direction of the American Red Cross

ANY CALAMITY of the magnitude of that which has descended upon the southern reaches of the north China plain is bound to have ramifications of the most far-reaching and oftentimes unexpected sort. The famine of north China will probably have become a matter of history-all who must perish will have perished, the elaborate relief work will have been liquidated and the workers returned to their normal occupations, and the spots denuded of population will have been again covered by the wave of humanity ever ready to flow into an area of less resistacne-before the most important of its multifarious effects upon the life of the country, economically, socially, commercially and folitically; and even upon the nations which have relations with China and the world at large (for no nation any longer suffers unto itself) have been recognized and tabulated. If, however, any of the ramifications are in the nature of a silver lining to the dark cloud
of misery, we well may, without in the least relaxing our sense of responsibility, drag these happier features to the light for the encouragement they will give to our spirits, as well as their own intrinsic value in the record of China's progress toward a more desirable social, economic and political status.

Famine suffering has always been increased hy lack of communications, and it is natural that relief should tako the form of communications constructions work; giving sustenance to the sufferers from the immediate calannity and affording, at the same time, a measure of protection against future disasters. Such rescue-construction work has usually taken the form, in India, of canal-digging, and efforts to put the refugee to accomplishing something constructive and permanently boneficial to himself while he is eating the bread of charity have been proviously made in China. The American lied Cross, which has had the vision to plan
a system of drainage and canal construction in north (hina would provide a 'arge degree of protection againet theods, and would at the same time conbat drouths by sumping water for irrigation as well as canal tramsportation, has shown consistency by establishing its entire relief work in the famine area on the construction basis. This action of the largest organization participating in the relief has encouraged other relief bodies to adopt a similar principle, and the idea has become dominant in the relief work.

The question arose as to what form of constrution work could be most advantageously carried out. River conservancy, with its opportunity to provide by irrigation against future drouths, appealed to the imagination, but was found to be impractical. River or canal conservancy requires skillfully worked out plans, experienced engineers and bosses, and special equipment and materials. It also, in China, requires the unwinding of endless official red tape. The only constructive enterprise to which a horde of unskilled peasants working under the small modicum of skilled supervision which is obtainable might be put in a day's notice appeared to be road building-and this is where the interest of the motorist and the motor-tradesman is anoused.

The north China terrain is most favorable for the building of unsurfaced roads, being largely clay, mixed with sand, and level as a floor. The problems of grading and rockwork are absent, and the recessary mechanical equipment is reduced to shovels, picks and wheelbarrows. In most cases the old right-o'-ways can be followed, and in cases where land must be condemned for cut-offs and more favorable routes the matter is tended to most expeditiously (often, it must be confessed, with only Oriental justice to the owner) by the local officials. The old roadbeds are inevitably worn down below the surface of the plain so that a cross-sction looks something like this:


It is necessary to change the contour to this shape

thus providing, for con iderable dirt-work. On the roads intended for purely vehicular traffic, such as the Red Cross road, no attempt is made to bring the crown of the new road above the level of the eurrounding country, it being planned that the ditches on each side, which are from three to four feet below the benches outside of them shall be sufficient for all ordinary drainage, and that the wide area of the benches themselves which are several feet below the crown of the road shall allow for the draining off of small floods. Of course, in event that the entire surface of the country is inundated, the road would be still more deeply
inundated. In the cases, therefore, of roads designed to be lued later ats railway road-beds, such as the two roads under construction ly the Ministry of Communications which will be described, an endeavor is made to lift the crown above the level of the surrounding country. This necossitates, usually, the lauling of outside dirt, the dirt within the roadbed itself being insufficient.


The youngest of these sisters was sold into slavery for four coppersbefore road building began
The American Red Cross, which, through Major Emmet White, laid its plane within a few days time and left them with John Earle Baker of the Railways Department of the Ministry of Communications, who was made Director-General, to canry out, has taken the place of pioneer and example-setter in famine road construction.. The Red Cross highway is laid out from Tehchow, in western Shantung, south-west along the old but choked up Grand Canal to Lintsing- 67 miles. In addition two cross roads have been laid out-one connecting Enhsion with the Tientsin-Pukow Railway at Pingyuan, a distance of eight miles, and a three-mile lateral to the bank of the Yellow River at Lintsing. The main highway does not follow the canal, being at one place, Enhsien, twenty-three miles away from it.

This seventy-eight miles of road is divided into ten divisions, and each division into six or seven sections, each section, approximating a mile in length is worked, when recruited to full strength, by five gangs of thirty men each. Thus, about ten thousand men are now employed, and the ten divisions of the road are being constructed simultaneously. The road will be completed throughout its entire length in about two months, provided the winter continues mild, and the thaw comes early. Since the Red Cross plans to give these men employment until the garn-

ering of the spring wheat, the remaining months following the completion of the highway will be put in, by those not needed for maintainance, in the construction of laterals connecting the important market-towns along the route with the highway. The road is to be delivered over to the provincial authorities on July 1, after which date the Red Cross assumes no further responsibtliy for maintainance. It is hoped tlat the authorities can be pursuaded to adopt and enforce a system of maintenance by tolls, collected preferentially for carts equipped with wide-tired wheels, and dosigned to drive off the road the narrow-tired carts that cut into any road, diat or macadam, like a plongh. Free use of the road is favored for any commercial motor-


Ogicinls Inanguratinag lioned C'onstruction
car service which may be established, with the aim of encontaging such entenprise

The Red (rois hightw is twenty-feet wide, momed to slope one inch to one foot from the center eath wis! The face is made smouth ly spadmig and and lampims,
and the constructors believe that, with careful maintenance, it will bold indefinitely. There are two foreigners over each division, one in charge of construction and one of stores. Nost of these leaders are officers lent by the 15 th U. S. Infantry command at Tientsin. They have been most devoted in their work, and Captain Impey, who has been Engineer-in-Chief, after having been gassed by a charcoal bumer, is now in lesifal with pneumonia. The division head., are greatly assisted in their work by the native section heads, who are largely returned coolies from France, and Lowsess by reason thereof a conception of gang-labor and discipline, as well as a hold on the imaginations of their countrymen, which greatly assists them in leadership. These section-heads are the only salaried men on the construction, receiving fifteen dollars a month. The gang bossen and gang


A family re-united as a result of road building
 themselves, which are recruited from the various villages according to apparem meed. Ther vention of camps las mot leen formd medenally at thete in llas- as rillage in the neightmernod of the site of the same liturs

 receives daily two of the scientifically balanced rations consisting labgely of millet and leans for cach man of ho








ever, is required of the applicants for work. Of late, some of thees have heen arriving in a weakened condition, but a few days of hean and millet fare bring hack their strength, and practically the only casualties have been the deaths of thee men who were shirking duty in the shetter of a small excavation when the ground above caved in. Practically no excatating work is reyuired, large gave momods being avoided and the country being devoid of hills. Crossings orer the wide, salndy beds of rivers which are fintically dey except in the fleod season frovide the mont dificult problem. Stream crossings are if possible avoided in


F'̈mine victims filling trees
surteying the route, but where impossible, the road is simply built down to the best fording place. As fast as the road is built it becomes rery busy with the transport of supplies from the railway to the various division and section headquarters. This problem of supply is about to be eased by the introduction of motor-vehicles, but we will save this for the conclusion of our article.

Following the lead of the American Red Cross, the Honan Relief Committee, consisting of the local gentry, the Roman Catholic mission, and the Canadian Church and Canadian Presbyterian missions, has begun the construction of a road after the same plan, to cut across the north-eastern horn of Hunan province and into Chihli. This road is being actually worked between Wuan Hsien in Honan and Hantan on the Peking-Hankow Railway in Chihli, and the portion of ten or more miles in length from Wuan to the Chihli border is nearing completion. This road is surveyed in extension from the west end to Kwantao, near the Shansi border, and from the east end to Tamingfu, Chihli, near the Shantung border. With the "lift" given by the half million gold dollars recently raised for the Honan committee in Canada, it is probably that the entire length, practically connecting Shantung and Shansi provinces, will be constructed. In event the Honan people reach Tamingfu the Red Cross will make an effort to connect with there from Tungchangfu, thus completing a motorable road from the Tientsin-Pukow Railroad across the northwestern corner of Shantung and the southern horn of Chihli to the Peking-Hankow Railroad, and on further across the northern horn of Honan to the border of Shansi. Such a road
should carry an immense motor traffic throughout the entire 150 miles of its length.

Another attempt to connect the Tientsin-Pukow and Peking-Hankow Railroad further north is being made by the Xinistry of Communications. The Dinistry has undertakell the construction of the road-beds of the long-projected Tsangchow-Shihchiachwang and Weihsien-Chefoo Railways by famine labor and with the proceeds of the famine surcharges on stamps, railway traffic, and telegraphs. It is planned that the road-beds should be utilized as motorroads until funds for laring ties and rails and supplying malliw- tw \& allumperd. Culverts and and bridges suitable to cany the railway are, however, to be included in the ar-truction.

Tl c. Vini-uty las ancomatered tremendous obstacles in its program, from Chinese who maintain that it has no atrthorization to utilize the famine tax proceeds according to its own lights, and who maintain that with the beginning of actual deaths from starration all government relief proceeds should be used in the direct supply of grain and food, whereby more people may be saved than by constructive works. Opposition has forced the work at Tsangchow to come to a standstill, but work from the Shihchiachwang end continues to progress. Work at Weibsien is steadily progressing, and at latest reports between twenty and thirty miles of the road had been completed. A general description of the methods of construction employed on the Wei-hsien-Chefoo line will serve for both these enterprises.

This road should, in the interim before rails are laid down (which, according to the present outlook may be a


Surfacing one of the new roads
long time) become the most important motor-traffic route in China. Its southern portion passes through the most populous district of Shantung, and probably also of China and of the Tronld ; a district as rich agriculturally as populous, and the home, as $\pi e l l$, of the Shantung straw braid, the Shantung raw silk and some of the best Shantung fruits. In addition to these assets, mineral deposits are being found under the rich, brown soil. A graphite discovery has been made within the past few weeks in the northwest corner of Laiyang Hsien, at a village called Yuehshih.
(Continued on Page 56)


The Palais du Cinquantenaire, in which the Brussells automobile show was held

THE FIRST continental motor show since the war, and the only one held in 1920, was opened in Brussells in December. The show was officially opened by the burgomaster and the king was the most distinguished of many notable vistiors.

The exhibition, which was a success from every standpoint, marked the return of the motor industry in Belgium from war to peace conditions. Twentyfive months had passed since the Germans retreated from the hand which they had despoiled four years previously, and those who visited the magnificent display of Belgian genius and industry, as exemplified at the motor show, could not refrain from remarking the marvelous spirit of the Belgian people as evidenced by this wonderful proof.

The building in which the show was held-the Palais du Cinquantenaire-was used by the Germans during the


A novel light bodly exhibited on a 10 h.p. Fiart by bitublissement Cich. de Currosserie et d'Automobile. The" front seat cen be' slid laterally to give entry to the single rear seat
occupation 1 eriod as a waxehouse, and after the armistice it was taken over by the Belgian army authorities for the same purpose. The army authorities were so reluctant to surrender the building that for a long time it was doubtful whether a show could be held, but arrangements were finally made to clear out the mass of junk the army had accumulated and to fit the place for a show. The big structure had been allowed to go to seed by the Germans and no small amount of work was necessary to put it in shape for an automobile show.

The show brought out the fact that Belgian factories are again producing cars, practically on a pre-war basis. Some of the old manufacturers were not represented, not having had time to get their factories going, but in their places were newcomers, two of which wese Belgia and Somea.

The show demonstrated one thing quite clearly, and that is, that the failure of Belgium to revise duties has had a remarkable effect on the motor car sitnation in that comntry, particulaty in the matter of chabling forcign manufacturers to obtain a foothold. Noderate priced Ameriean cars were panticularly noticable, as were impotations frem Fingland and Fimence. The Americans, expectally, swem bont on capturing the market and one of the makers fom that country has established hemdquarters and an exhibit in a hotel, whore it is said sales averaging $1000,00(1)$ fiances ate made weekly.

France, as ksuat, is well mposemed in the bedgian market, bot this is not sumpising, in view of the proximity of the French mamefacturems. The (eemams did not attepmt to get an exhibit into the hath, reatizing. apparently, that it would be safor for them to work unoldirusivoly for the presemt. The lioseh magneto, aluent. whim there is such an stio in linglish trate diteles, was re(Continued on Page 5: )

# HOW CHINA CAN GET GOODS ROADS 

They Will Come in the Diract Ratio to the Sale of Motor Cars and Trucks<br>By Arthur West, Editor THE ORIENTAL MOTOR

WHEN-and how-will China get groxl roads?

This question is of vast interest to the Chinese, to foreigners who live in China and to the outside world. It is of interest to China hecause the whole future of the country depends upon the answer, notwithstanding the fact that less than one prercent of the Chinese people realize it. It is of interest to foreigners resident in China because there can be no satisfactory return for their investments in China, in time and money, until there is a road system. And it is of interest to the outside world because China cannot fulfil her obligations to the world, nor the world to China, until there are highways in China.

China probably has had more reforms planned in her behalf than any other nation in the world, more, probably, than all the other nations put togeher. Every foreigner who comes to China linds, within a day or two after he steps ashore. that his mind is revolving with more or less ambitions schemes for making over (hina anci the Chinese people. This is quite natural, becaluse it is so extremely easy for the visitor from the Western world to see that China is sorel; in need of a mmber of things : so sorely in reod of them that the visitor wonders hew it could have happend that the lack hadn't been pointed out before, and the need filled.

Always, for some reason or other, these schemes for reforming China fail of achievement, and presently, almost before they know it, the authors of them have adopted the attitude of the old timers, which attitude is, in a nutshell, "Let Gtorge do it." Even the old timers give an occasional thought to the number of things of which China is so sorely in need, and nourish, secretly at least, the hope that some day, in some manner, these needs will be met. But as for


And there you are, for, indeed, what is the use? What is the use of wasting one s energy againt the trenendons wall of Chinese inertia? What's the ase of trying to make a dent in that old, slow, mountainous mass of humanity?

Putting a reform into effect is like buidding a house, in that the action must be predicated upon a plan. There must be a thecry of creation before there can be creation, and right there lies the difficulty of getting anything done in China.

Because of the uncertain future from a political standpoint, and of the many factore that cannot be determined in advance, it is extremely difficult to lay down a definite plan for any constructive work affecting a large saction of the

Chinese public, such as road building. Nobody knows what will happen tomorrow in China. Moreover, nobody in China has supreme authority, or any authority the tenure of which can be permanently guaranteed. To the foreigner, accustomed to the smooth working of governmental machinery at home, and to the functioning of institutions which are permanent in substance even though changing in form, the Chinese seem to be four hundred millions of human beings running loose.

And in a sense ther do run loose, since it is well known that the Chinese are perhaps the least governed of civilized people: Nevertheless, the Chinese are controlled by a force that is more rigid and exacting than the laws and statutes of western countries, duly enacted by ponderous legislative bodies and as duly inscribed on the tablets. That force is the force of public opinion.

Although they are not hemmed in on all sides by laws, the Chinese are law abiding. American newspapers are full of stories of citizens organizing in armed vigilance committees to aid the police in suppressing crime waves, and it is a dull day indeed in which some bank is not held up by a gang of bandits in the States-this while those of us who have the good fortune to dwell among the Chinese think nothing of Mundering, without the slightest fear of harm, in the darkest and narrowest streets of Chinese cities at any hour of the day or night.

This is but one of the many proofs that public opinion, in China, is a more potent force than all the written laws of the western nations.

Fublic opinion, therefore, is the force that must be reckoned with in bringing about any reform or improvement affecting any considerable mass of the Chinese people. And since road building falls into that category it follows that the way to good roads for China lies through the shaping of publi : opinion into a favorable attitude toward road building.

## How can this be done?

It can be done by those who make speches about good roads, by those who mite articles about good roads, by those who attend meetings that have for their purpose the spreading of the good road idea, and by the fellows-ten thousand times more important than all the others put together-who sell automobiles.

The fellow who sells automobiles is the real road builder, because he is the fellow who is constantly creating the publio opinion which will eventually result in road building in China.

Good roads are built because of selfish motives; because the builders of the roads hope to get a return on their investment. They figure the increase in value to their property that will accrue from good roads, or the increase in profits that will accrue to their business from lowered transportation casts, or the benefit and enjoyment they will get from the use of the roads. The people who work to bring about good roads contribute their efforts toward the achievement of that result because they have the vision and foresight to porceive that if roads are built they will dorive some personal benefit from them. They do not pitch in and help the road movement merely becanse they are patriotic, or because they are idealistic by nature. Not a bit of it. Ther ask themselves, first: "What will roads mean to me, personatly?"

The problem, then, is to get a sufficient number of popple to thinking of good roads from that standpoint-to induce them to see that they will personally benefit from good roads.

It is obvious that the man or women who own : a motor car, or a motor truck will be quicker to see the advantages of good roads than anybody else. The car and truck owner is the first to see that good roads have a real economic value, and that they always are worth more than they cost. The non-owner of a car thinks of good roads, if he thinks of them at all, as an expensive luxury, or as something that the general public pays for in order that a fow automobile owners may have the means of obtaining pleasure. Because of this attitude, which is coly natural, the non-cwner of a car or truck is oppased to road building. He thinks he is sorving hic own interest best liy doing all he can to obstruct rond building, and in nine cases out of ten lie continues to bio an obsiructionist until he bocomes possiased of a car or truck.

Posseswon of a car or truck callses him to become interested in roads, first, because he desires the moans of obtaining a retun from his car or truck investoment, and later, because he is brought to soe and to understand, from the study of the subject that the possession of a car or truck caused him to undertake, that roads have a real esomomic vilue, or in other words, a community value.

Anybody who will devota some study to the road gites. fion will have no difficulty in discovering that good roads are a good investment for the whole community-thut everybedy bonefits from good rads, and that their advantages are not confined exclusively in the owners of the vehicles baged on them. Trake a pavial street in an crowded city. for instance. Tho ownors of the valucle:s actually wed on that street constitute as very small fraction of the population, yet nolsody would dream of suth a thing as asking the vehicle owners-the mon who make acturd nse of the street - To pay the entire cost of the prament.

This is becanso evorybody reatizes that the value of the prvement is both direct and indireed-direct to the vehielo owners, and indirect to the remaindor of the pepulation.

But it was the vehicle owners who first proved that simple proposition. If tho vehicle owners could have userd their vehicles just as expeditionsly and cheaply on dirt strects, and had never said a word about pavements; it is doubtful whether there would be any pavements, because the general public had no selfish interest in pavements. As long as freight was deliverod and the ordinary needs of transportation satisfied the general public did not care whether the strocts ware paved or not. The vehicle oxvners, however, found out from personal experience that pavements would mean long life for their vehicles, cheaper and better transportation service for the public and greater value to property, and for these reasons they set up a clamor for pavements. In the course of time they brought others to so the logie of their reasoning-to see, in other words, that pavements would benefit not only the vehicle owners but the general public as well, and as a recult we have pavements in every town and city of the world.

It is the same way with good roads. The vehicle owns ers have no difficulty in seeing the economic and community value of gcod roads, and just as soon as wo have enough vehicle cwners we will have a force large enough and important to impress that truth on the general public. It is clear, therefore, that the way to get good roads in China, or anywhere else in the world for that matter, is to increase the number of vehicle owners.

Some folks are given to saying that "China is different," and that the facturs which have a determining influence in other countries will not apply in China. This is mistaken reasoning, the error of whish can be detected by a little observation. To say that the Chinese are different is equiralent to saring that the Chinese are unselfish, and to say that would lo nonsense. Tho Chinese are just as selfish, just as cager to improve their condition in life, just as eager to pos* wess material things, as any people anywhere.

The real difference between the people of (hina and those of the western countries is ad difference in izeats as to method, the ('hinese being more individualistic than other
 individual chanese to make a living tham is repumed in othere counthes, and fer this reason the (hinese an more compert tive. They have not diseovered, as set, that organized offont is mere fruitful than individual offont.

But it should be remembered that thise thath wats of com.

 prevaled at home, with evergholy lom himsilf and the devel
 and on every hand we lind orgathend oflort. Siar mandea.
 organization, the proprose of which is lo fimther the interestes of the industey with which he is diembtice. In com tied


 (C'ontsmued an liayci is)

## WHAT WOULD BE THE BEST LOCATION FOR A MOTOR SHOW IN SHANGHAI?

The Adventages of a Specially Constructed Mat Shed on the Bund<br>134 Ahther West




DISCUSSTON OF the project for holding an automolile show in Shanghai has developed many interesting expressions of opinion, and always, whenerer the subject is mentioned the first question is: "Where will the show be held!"

THE ORIENTAL MOTOR does not regard this as the most important of the problems that will have to be solved in connection with the show for Shanghai but there can be no harm in discussing it.

It should be remembered, first, that an automobile show is essentially an advertisement, and in contemplating a location for the exhibition it should be borne in mind first cif all! that the location st.cald be chosen with a prinary view to its adrertising value. The lig idea is to make the show ".stand ont."

That is of particular importance, for the first show. First impressions are important, whether with regard to an antorshale slom or mything else, and if the impression of the first antomobile show in Shanghai is good it will mean a tremontons adrantage to the trade here when it comes to staging sulisequent shows.

The first impression will also mean a great deal as it applies to the first show, and for that very reason no effort should the sared to make the frast whow is fine as possililea fine show not only from the standpoint of exhibits, but fine also from the standpoint of location. The more freciachate the show is made the better its chances for adhering a real suctess.

It is a familiar axiom that the Orientat mind loves a Fpectacte, and angixorly at all familiar with the Orient knows that this is true. Iook at the "fuss" that is made orer such events as weddings and funerals. The more color and grandeur the greater the appeal to the people who
are native to this part of the world. Trude cmissaries of the various foreign nations for years have urged their respective governments to house their consulates and legations in splendid buildings, because they knew from a study of Oriental character that this would give prestige, or "face," to the nationals of those governments who were stationed bere to cultivate trade relations.

And in cases where this principle has been applied the results have justified the expense involved many times over.

The same rule will hold with regard to an automobile show, for which reason the exhibition should be made complete both within and without. Staged in a separate building, so that the bigness and magnificence of it will stand out, the chances for the success of the enterprise will be immeasurably enhanced.

This brings us to our main contention, which is: that the show should be held in a matshed specially construcied for the purpose. As far as Shanghai is concerned, the mat shed for this purpose should be erected on The Bund provided the necessary permission can be obtained from the Municipal Council. The Municipal Council might be disinclined to give such permission, but THE ORIENTAL MOTOR believes that if the project wero explained to the gentlemen who comprise the Council, with emphasis on the great good that would accrue to the whole community from such an exhibition, they could be luought to look upon the project favorably. Guarantees would be given; of course, that no damage would be done to the plot, and that any of the sod or grass disturbed or injured would be restored at no expense to the city.

The rorthemmost plot on the bund, and the smaller plot next adjoining to the south, would be an absolutely ideal location for the first Shanghai automobile show, for
several reasons. First of all these plots would give plenty of room, and the room question, when it comes to holding an automobile show, is of vast importance. There probably never was an automobile show in the history of the industry, anywhere in the world, in which the managers of the enterprise had all the room they wanted, or all that they could use advantageously. In New York some of the exhibitors have to go upetairs, which is a disadvantage if for no other reason than that it relegates some of the exhibits to a secondary position. In London the lack of space at Olympia makes it necessary to divide the exhibition into two parts, some at Olympia and some at White city.

In these plats on The Bund, one of which could be used for passenger cars and the other for trucks and accessories, there would be abundant space for each exhibitor. Moreover, evcry space would be absolutely equal to every other srace from the standpoint of location and desirability. The center aisle would be wide, twice as wide as the center aisles at Olympia or New York, and there would bo four entrances, one at each end of the two main structures. The uniform shape of these plots would permit a display comprising a wide center aisle running lengthwise through both buildings, with the booths arranged symmetrically on both sides of the aisle.

Outwardly, the building would be decorative in style, blazoned with streamers and flags by day and illuminated with an electric sign at night-perhaps an animated electric sign, with colored lights. Scmewhere in town, or if nbt
in town, then off of one of the warships anchored in the river a powerful searchlight could be abtained, to flash shafts of light into the sky at night, thus advertising the show and adding to the magnificance of the spectacle.

And inside-Oh, boy! What a riot of color and beauty could be achieved! Myriads of Chinese lanterns would make the place a veritable fairyland-more beautiful than anything ever dreamed off in the colorless nations of the west.

As to the cost, preliminary inquiries indicate that this would not be in any sense prohibitive. The mat shed that was erected on the bund for the Horticultural Society's exhibition last fall was put up at a total cost of only 3cc taels. This shed, of course, was neither as large nor as "fancy" as would be the one required for an automobila show, but even when allowances are made for those facts it can be seen that the cost would not run to very high figures. Insurance up to 200,000 taels, which certainly would cover the value of all the exhibits, could be obtained for aroun? 300 taols.

Figure building, lighte, decorations and insurance at five or six thousand taels, or even ten thousand taels, which certainly would be the utmost outside limit, and the majer portion of the whole expense of holding the show is covered. Does anybody imagine that such a show, in such a location, would not attract enough visitors at, say, one dollar each, to pay for it? It takes more of a pessimist than is to be found
(Continued on Page 36)





The Verville-

Packard which
won the

Pulitzer cup

THE RIMCE for the Phlizer tron orer a trimgulir 33 mile course en Long land, New louk, weated great pul lic interest in arjation circles, and setred to send the year 1920 into ateronatical history as :? Leriod of great achievement.

The race, easily the premicri aviation event in America, was won by a ferial Verville-l'akiad machine of are ial design and driven by Capt. ('. C'. Morele!, attached to the office of the Chief of the Air Service at Washington. The

machine he used was the one that Messrs. Jesse Tincent and A. V. Verville had constructed for participation in the race for the Gordon Bemnett ('ul), whd which developed engine trouble after arrival in France. That the mechenical difficulty which prevented the machine from being a factor in the Eennett cup race was eliminated in time for the Pulitzer test is indicated try the fact that the ship achieved an arcrage swed of nearly three miles an hour over the 132 mile circuit. The macthine proved, in this wace, that it is one of the fastest aimplanes in the world, and among the 25,000 spectators who witnessed the Long Island race there wa: keen regret that the plane was not in peefect trim the dar of the big race in France.

The wiming plane's chief charateristic is the extremely powerful engine with which it is equiper, namely. a special lackard motor of $6: 30$ horephower. This is the engine that Col. Tincent has been working on practically
from the day the world war started, for it was Col . Vincent's belief, the instant he learnod from the newspapers that the long dreaded European conflict had at last broken loose, that the airplane would play an important part. Acting on that belief be began to experiment with aircraft engines and while he achieved other results between that day and this, principally in his contribution to the development of the Liberty motor, the power plant in the plane that won the Pulitzer race represents the best of what this distinguishengineer learned in the many years that he has been working toward the development of aircraft engines.

The main question in the minds of aircraft designers, now that this 630 horsepower motor won the Pulitzer race, is. whether it is necessaty to have such great power to achieve great speed, and whether speed beyond a certain point is desirable. The first of these questions arises from the fact that the winner of second place in the Pulitzer race was a Thomas-Morse single seater scout plane of only half the rated harsepower of the winning Verville-Packard. This machine came within 9 miles an hour of averaging as high a speed as the winner, which gives rise to some doubt as to whether greater power or better design is the thing to strive for in future aiplane design.

Capt. Moseley, in a series of test flights with the Ver-ville-Packard plane, brought the American speed record up to 186 miles an bour, but failed to establish a new world's record, which is 196 miles an hour. The failure to achieve a new world's record was somewhat disappointing to-American army officials, as it was believed the special plane in which he made his attempts was capable of upward of 200 miles an hour.

These tests, six, in number, bronght out some interest. ing developments, however, and from observation of those it is believed that airplane designers and engineers will be able to bring about an improvement that will result in greatly increased speeds. For one thing it was discovered that the Packard engine in Capt. Moseley's plane did not develop as much power when in the air as when on the
ground, the revolutions being some 300 per minute less in flight.

Col. Vincent, who was perhaps the most interested of the group witnessing the tests, expressed the opinion that this falling off in power when the machine took the air was due to the fact that the terrific speed attained created a vacuum back of the carburetor, and that this circumstance prevented a proper mixture of gas and air from reaching the manifolls This defect, the engineer said, can be remedied, and to accomplish this the plane was sent to McCook field, near Dayton, where it was planned to test the carburetor in a wind tunnel by subjecting it to air pressures equal to those encountered at great speeds, and to provide means for preventing the vacuum if tests developed that the falling off in power was due to that cause. It was the intention to again send the machine into the air in another effort to bring

The famous Puliticer trophy, the annual
conitest for which has come to be the
promier event in Americun aviation-
the Gordon Bennett cup of America

the world's record to America.
The accompanying table shows the principal charac teristics of the first six planes to finish in the Pulitzer race:

| PLaNE | Engine | Rated horse power | $\underset{\text { wEIGHT }}{\text { GROSS }}$ | $\begin{aligned} & \text { WEIGHT } \\ & \text { PER. FT. } \end{aligned}$ | $\begin{gathered} \text { WEIGHT } \\ \text { PER } \\ \text { HORSEPOWER } \end{gathered}$ | weight EMPTY | $\begin{aligned} & \text { SPEED } \\ & \text { ATTALNED } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Verville-Packard | Packard | $630 \mathrm{hp}$. at 2000 r.p.m. | 3233 | 14.12 | 5.06 | 2485 | 178 |
| Thomas-Morse Single Seater Scout | Wright | $320 \mathrm{hp}$. at $1800 \mathrm{r} . \mathrm{p.m}$. | 2095 | 8.3 | 6.2 | 1505 | 169 |
| Ansaldo I Scout ....... | S. P. A. | 220 hp . | 1965 | 8.7 | 8.9 | 1470 | 154 |
| Orenco Single Seater Scout | Wright | 320 hp . at 1800 r.p.m. | 2442 | 9.3 | 7.2 | 1776 | 152 |
| Vought VE-7 | Wright | 180 hp . at $1800 \mathrm{r} . \mathrm{p} . \mathrm{m}$. | 2095 | 7.35 | 11.6 | 1560 | 143 |
| First De Haviland | Liberty | 400 hp , at $1600 \mathrm{r}, \mathrm{p}, \mathrm{m}$, | 3600 | 8.2 | 9.0 | 2390 | 140 |

## WHY THERE IS WASTE IN PETROLEUM PRODUCTION

The preduction of petroleum involves as higher proporticrs of waste than is: found in the mining of coal, with far more serious consequences because the domestic supply is altngether inadequate for mecting the present requirements.

Leess than half of the oil underground is rased to the surface ; there has long been an over-production in respect to the higher tynes of uscs, prompting the surplus to be used for crude purposes in the place of coal and water power. The resronsibility for these conditions lies with the small-unit competitive type of mining prevalent in the United States, whereloy the geologic unit or pool is abbitrmily divided into many small holdings seqaratod ly ventical bondery planes. Petrolem is a migratory minchat, moviso madergromed in the direction of lower persure, and hense carh individual poducer is forced to race with his meightor for the extmetion of the product. Thus not only is production in call new ficld quisekly forcect beyond the handling facilitions of the monent, but much of the oil undergoned is promanontly placed beyond recovery ly this discortant type of frodustion. 'Jhere is a drift toward commercial intembtion and individual co-opreation in getrolemn mining, bat 1 ilh insufficiont rapidity in viow of the resonmser si\%s.

The transportation of petroletm mathers las of :an cextensive fyem of pige lines, thonsands of miles in lemgh, sprad over half of the combty, conneding points of production with refineries, markets, and seaports. The efficioncy attained in tho transportation of petrolemen conc:
is in marked contrast to that characteristic of coal energy and should point the way to the reconstruction of the latter, whose faults are now throttling the commodity transportation of the country as well as contributing to unhealthy urbanization and sectionalization.

The utilization of petroleum is far in advance of coal in that the bulk of crude petroleum now produced is separated into its chief components-gasoline, kerosene, fuel oil and lubricants-whereas coal is employed dominantly in the raw state. Has again the oil industry points to the analogous ne at for a coal refining industry to sopatate wal into molite forms of chergy and commodities. The milization of the varicus petroleum products displays various degreen of efficience, with the greatest diwount alplying

 nor are the by-product potentialities sufficiently developed.












# The Oriental Motor 

Motoring-Motor Cycling-Aviation

A Monthly I'ublication Iezeoted to . Motor Interests in China and the Far East Generally
Founded April, 1919
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## ARTHUR WEST, EDITOK

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No. 11

## EDITORIALS

## ALTOMOBLLE SHOWS-AND SALES

The great value of an atemo! to show, from the dealen's stand fint, is theit it stimulates sales.

Just how, the skeptial may ark, dees a show stmulate sales? The stimulation of sales is both direct and indirect. 1)irect, lisealle theae newer was an antemolile show :ntplace that did not renelt in dinect :rle-that is, s:ales to
 and there to buy a car or a truck or an a ws y

But direct sales are the least of the gcod results of a show from a sales standroint. The lig value of tho show
 people in large mumbers, and :. th ere vistors move if on
 they see puzzles them and they ask about it. This has the effest of cetal lishing a leint of ematat between dealer and buyer.

One question leads to another, and another leads to a third, and so on until dealer and risitor :re "talking turke"." Mar-le the? do rot "tille turkey" theen and there, 1 ut in nine cases out of ten the visitor will leave his name with the
dewler. wherem in in charge of the dealer's hooth at the $\therefore$ 小, "ith Her rcult that tlic visitor can be looked up afterwands.

Ther: are men and women in every town and city who alt por pective cal hacrs, lat whose names are unknown (o) the dealems. lioht now, to-day, and crery day, many mon and women in thin and evely other community are contemptating the purchase of a car, and the only reason that dealers do not huny, post haste, to these persons is because they do not know their names or where they live.

If thene wats sthch a machine as at "thonght recorder," and comy antemothe dealer liad cone in his office, so that he could tell :injly ly locking at the dial just what persons in the chammity were thinking of laying a car, or were in a buying mood, how easy it would be to make sales! All the dealer would have to do would be to wait for the "thought rocorder" to give him a Hash, when away he could go with an coder blank.

But unfortunately the "thought recorder," or mechanical mind reader has not yet been invented, which meam: that other methods have to be used to discover who is thinking of buying an automobile.

And the automolile show is the best method yet deviced for that purpose. Visitors to the show, if they are in the "contemplative" class, cannot easily conceal their intentions once they get inside the show. They ask a question or make an observation which to the keen witted dealer who knows the principles of salesmanship sars as clear as words: -I am thinking of luying a car and if you are on the job row will sec to it hat I luy onc either now or in the near future.'

Take the case of Jonkintown, Pennsylvania, for instance. Jenkintown is a subuls of Philadelphia and the people who live there are mostly in good circumstances. In fact, most of the residents of Jenkintown are affluent.

There are cleren daders in Jonkinturn, and last becimber they decielod to hold a show-de ided to hold a sh:ow in site of the frotests of some of the dealers. These proctosting dealers argued that a show in Jenkintown would be usaloss, since every doaler knew practically every resident of the place, most of them intimately. Bosides, the faint learted cnes said, everytody in this town already owns one or more automobiles.

And that was a frect. Nearly evervody in this town did cwn one or more automoliles, and some of the resitonts owned a whole fleet of cars. Nevertheless, the promoters went shead with the show, and to the abcolute astonislment of the fiint leeatel dealos, theat little slow, in which only oleten dealers raticipated, rosulted in more direct sales for each dealer that he had expected to sell in the whole year, and tumed ip dezens of 1 respective buyers that they dd not know existed. Scme of the old owners, it was revealed at the slow, were in the market for new cars, and some of the residents who had not purchased before and whom the
dealers had given up as hopeless, were brought to change their minds once they got into the show.

If an autcmobile show will accomplish that result in Jenkintown, Pennsylvania, where the "saturation point," if there is any such thing, could reasonably be supposed to have been reached long ago, isn't it altogether likely that a bigger and better show in a place like Shanghai, where there is much more wealth and where a show, because of its novelty, would have a far wider arpeal, would accomplish even greater results?

The ORIENTAL MOTOR is convinced that it would.

## BETTER MOTOR DESIGN NEEDED.

In a great meny corntries where motor cars are used extensively there is leginning to be an insistent demand for cars of greetcr fucl mileage. This is prarticularly thee cense in Europe, where the war's devastation created a pressing need for econcmy.

So insistent is this derand for greater mileage that engineers are beginning to take the question seriously, and to ask whether the advantages of great power offset the ever increasing cost of fuel. Up to the present it has been considered good engineering practice to build cars against maximum service conditions; speeds of seventy or eighty miles an hour, great ability to operate on "high," quick acceleration, etc.; with little thought of what all these things mean in terms of fuel consumption in ordmary running.

The grat majority of motorists like to feel that they have reserve power at hand, to use whenever the whim strikes them. Thcy like to know that they have great speed and hill climbing possibilities, but few of them over stop to think that in order to have an engine with these potentialities they must use up a lot of excess fuel in normal running, ard it probably isn't too much to say that nine tenths of all running is normal.

With cheap fucl, the avorage motorist does not give much thought to what it costs him to keep his gasoline tank replenished, but when filling the tank means the dimrip)tion of a ten or even a twenty dollar bill it is, as our old friend the Potash would say, something else again.

Most makers of cars emphasize low fuel consumption in their advertisements, but hitherto they have not emphatized it sufficiontly when laying down instructions for their ongineorng departments. Fugl comomy, therefore, his been more or less ompty phase ; at least it has been ompy compared to what it would have been if engineers and derigners hatd attached as much importance to this phase of designing as they have to other departments.

The soating cost of gasoline all over the world, howerer, is begiming to have effect, and the motoring pmblic is silying to the mandacturers: "(iive us cars that will trabl farther on a gallon of gasoline." Those familiar with motoring conditions in the Far Tast have long known that a proper development of the industry in this part of the world is
dependent upon the fuel question to an even greater extent than in the home countries, particularly as it applies to native motorists.

China is a great distance from present sources of fuel supply, which means that oil companies operating here must sell their product at considerable advance over what they charge at lome, even under the most favorable circumstances. They have hcavy ocean freights to pay, a vast and cxtensive field organization to maintain-with many offices and stations to be maintained at a loss-and an extremely heavy overhes charge. These and other factors make it necessary to sell metor fuel in China at what admittedly is a high price.

It is a matter of great importance, therefore, that the gasotire motors used hore should lia as economical as [omille. The term "fuel conomy" should have a real mening os it aplies to China and the Far East, for it can be said in all truth that every reduction in the amount of fuel necessiny to oprate motor rchicles and machines in this part of the world will mean an extencion, in equal ratio to that reduction, of the development of the industry.

## THE TRADE OUTLOOK

What dees the coming season promise for the automotive industry?

In trying to make an intelligent forecast it is necessary to contemplate world conditions as a whole, and to estimate, as accurately ass possible, what reactions we will experience locally from the general world condition in the trade.

It is enowaging, therefore, to know that things: are "r"'hirg up", in what we out here designate as the home countries. Reports are trickling through from Europe and Amcrica of a geneal improvement in trade conditions. The winter shous, for which some of the pessimists predicted conplete falure, were succossful in every instance, some of than more of a suciess than ever before. From London and New Iork came reports of tremendous throngs jamming their way into ()lympia and (irand Contral Dalace.

Tliese, combinly, we goced signs.
The trade press is mpimistic, eren cmonsiastis, about the proguets for the coming selson, and cren when allowancess ate made there is still plenty of rome for confodence. some of the bade fatpers are talking of shortages, and Whate it seems hard to believe that the fomemdens matnofactuing organzations will not bo ahk to sapply ally demand that may la eroated, still, it showld be remombered that for a consideathle perided this wither the fartor? Whedes practiaally stopped. And ior commertion with this it shombd als: be bome in mind that there is al late valume of promChasing for nomat, stathe neods meds which comtinte in spite of atl conditions, and that these purdmaice, in the very natue of things, must hate ent memer stocks atment to the vamishing point.

On the whole, therefors, the signs are sital for a mo vival of business in the spring and thomghout the exmmer.

## WHY NOT PASS LAWS TO KEEP THESE FELLOWS ON THE GROUND

## They are a Menace to their Dependents, the Public and the Industry



Her will breati his neck-acentually

THE ('HAD PICTLEED) abore is poesesect, doubtless, of a lot of comage, but what does it pore if he is?
A great many sorions minded mess are consinced that the airplane will contribute greatly to the solution of many unsolved transportation prohlems throughout the world, and these men lave millions of doll:rs legitimately inverted in enterprises the success of which depends upon public acceptonce of aircraft as a commercial utility.

And yet, every time one of these airplane acrobats breaks his nock-and they all do, eventually-the airpline industry gets another punch in the eres that their tomfoolery has already blackened.

The aimplane will not find popular acceptance until the general public is made to see that they are SAFE. It doesn't matter how fast ther will go, or how much thes cont, or how long they lant-the whole meat of the question is: ARE THLI SAFE?

There is compctent testimony to the fact that airplanes are safe if legitimately used-if put to the uses for which their makers intended them. Col. Jesse Vincent, who did so much for the aircraft industry in the development of the Liberty motor, made the statement some time ago that an aimplame operated under same conditions is safer than an antomobile, and that the greatest proof of thio Was furnished in the training camps during the war.

It these camprs, he said, thonsands of pomg mon who were totally lacking in previous mechanical training were quickly tanght to fly, and while there were some acidents he said it was a constant marvel to him, considering the rawness of the cadets and the more or less experimental nature of some of the machines, that the fliers didu't come tumbling down out of the sky literally in flocks.

Lithichile: ance more accidents in a day than airl$^{1!}$ amc: do in a re:r, yet the pullic las no hesitance in using automobiles on the score of safety. Airplanes, however, are different, as is indicated by the fact the mere mention of going up in one is sufficient to send shivers up and down the spine of the average persen.

Why?
One of the reatus is: that aiydme accidents are more srectacular, and also, more advertised. An automobile fatality is not a surprising thing any more, because people have come to acept thom as: one of the ordinary hazards of life. To refuse to ride in an artomobile on the ground of denger would be on a lar with refusing to walk along the street on the gromed that a brick might dron off a building and light on cne's head.

The public mind accepte, subconsciously, these and numerons other ordinary hazards of living. But the public mind does rict accelt a five thousand foot plunge from an aiplane as an ordmery hazard, which means that before the public can be made to accept airplanes for general transportation uses these five thousand foot plunges-and plunges from all other heights for that matter-will have to be obliterated or reduced to the lowest possible maximum.

And one way to reduce them is to prohibit acrobatic exhibitions. They do not prove anything except that the acrial acrolat is posisessed of an umsual amount of conrage, or that he is incapable of making a living in a more sensible way. Nillions of men have courage, as was proven on the battlefields of Europe during the world war. Millions of wromen have courage, too, as is established by the fact that for every one of these aircraft acrobats who parade their bravery there are a thousand wives and mothers who daily

[^63]The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

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## AIMERICAN FACTORIES GRADUALLY RE-OPENING

Manufacturers Plan to Increase Their Output Steadily

Tetween 8,000 and 10,000 men lave retumed to work in automobile factories at 1)etroit. Whike it is the flan of the manufacturers to increase forces and production steadily, it is admitted freely there will be no real resumption for a month at least.

Wage schedules in all plants which reopened yesterday have been cut around 20 per cent, hint ind complaint has heen received and workmen, after weeks of idknow, ate apparently enger to return at the reduced suale. The strpping of the Ford and Dodge plants simplified the wage problem and plenty of labor in now available at a reasonalile wage. Best of all, manufacturers sas, the retumed workmen are full of pep and are apparently ready to give full return in service despite the wage reduction.

At the Dodge plant General Manager F. J. Haynes declined to predict the date of resumption or the schedule likely to be in effect on reopening.

Cadillac is still taking inventory,
Packard reopened with about 50 per cent of the regular force. Officials say they will increase the force as circumstances warrant. Production will be confined to closed jobs on the single six chiefly and only in keeping with demand.

Studebaker opened plant No. 5 with 400 men. They are getting the plant in shape for resumption of production in all the company's units as announced before the holidars. They will start on a schedule of 90 cars daily for all plants, increasing as conditions warrant.

Paige-Detroit began taking back married men and hupe to get back into production as scon as the plant is in shape. They will maintain a rate of 25 cars daily with about 1,000 men working temporarily. The company has arders for January delivery totaling $\$ 2,000,000$ and for February of $\$ 2,500,000$.

The Lincoln Motor Co. has about 200 men at work though not attempting to produce any cars. All its efforts are lieing centered in the parts depatments.

Ofticials of Maxwell-Chalmers say the Chalmers plant wii ofen with alcut 300 men working on closed cars of both types.

About 75 men went to work at the Columbia Motor Co. in the parts department and they are getting the plant into sharie for resumption of production. The date of starting has not been decided.

Others plants are still down so far as production of aricmobiles is concerned, thongh the parts departmente in all factories are being operated except in the case of Hudson aud Hupp which did not stop for inventory, continuing on th.e curtailed schedule in vogue the last two months.

The Essex plant plant is closed but both Hudson and Lssex cars are being built in the Hudson plant at the rate
of inout 15 daily. Hupp is continuing its schedule of 35 mantained since December 1.

Buick will get under wey and will continue indefinitely the daily schedule of 250 . Oakland and Olds expect to start with a short force and their output limited to the demand in sight, though a schedule of 100 for Oakland and 30 for Olds will be the starting figure. Reo has resumed prodution list is contiming on a short time schedule and 1, uiding atout 20 cars daily.

## U. S. GASOLINE EXPORTS INCREASE

## Produces Bring Up Daily Output by 4,000.0 00 Gallons

Comparative analysis of production and consumption of gasoline in the United States for the fir t nine months of 1918,1919 and 1920 as compiled by the Bureau of Mines shows evidence of improvement in the gasoline situation. Despite the heavy increases in domestic consumption and the export trade, the stocks on hand September 30, 1920, were considerably larger than in the corresponding period in 1919 but less than last year. The refiners produced a daily average of $15,129,370$ gallons of gasoline during September this Jear as against $11,319,419$ gallons di.ring the same pericd in 1919.

The refineries reported $288,195,394$ gallons of gasoline on hand September 30 as against 269,772,723 in 1918 and $371,125,419$ in September, 1919. During the first nine months ended September 30, 1920, domestic consumption of gasoline amounted to $3,211,275,983$ gallons, a noteworthy increase over the corresponding period last year when domestic consumption aggregated $2,574,541,261$. These figurcs reflect, of course, the increased use of internal combustion engines. Exports showed a high percentage of increase as $465,439,922$ gallons were shipped abroad since Jan., 1920 as compared with $268,166,964$ gallons for the nine months in 1919. The foreign trade for last year exceeded 1918, regarded as the banner year because of the use of automotive equirment incident to warfare. Shipments to insular possessions for the firct nine months last year amounted to $16,312,286$ gallons and $12,889,050$ gallons of gasoline in the scme period the year before.

Consumption of lubricating oils since Jan , 1920 amount. ed to $477,310,535$ gallons as against $389,636,571$ gallons in 1919. The total stocks of lubricating oil on hand September 30 was $130,449,829$ gallons. This figure represents a sharp reduction in reserves for in September; 1919, there were $158,967,070$ gallons of lubricating oil in stocks. The fact that there has been but little increase in the daily average production for this slump for three years easily accounts for this slump.

## THE CONSTRUCTION OF GOODYEAR CORD TIRES



They are made in the Straight-Side type only.



## U. S. HAS A BILLION FOR ROADS

## Total Appropriation for 1921 Building More Than A Half Million

Over $\$ 1,000,000$ non is now avalable for road builling and matatainance in the Inited States, of which appereximately $\$ 550,000,000$ will probably be expended duwing 1921 according to figures compiled by the 1. 1. I. (reond Rambs Board.

Sitate honds for highway improvement agorecating $\$ 533,800,600$ have been authorized duing the pate there years. During 1918, state bonds amounting to $\$ 60,000,000$ were authorized in Illinois and $\$ 50,000,000$ in Pennsylvania The following issues were authorized during 1919

| California | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\$ 40,000,000$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| Oregon | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $12, .500,000$ |
| Nevada | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $1,000,000$ |
| South Dakota | $\ldots$ | $\ldots$ | $\ldots$ | $4,500,000$ |  |  |
| Wyoming | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $2,800,000$ |  |
| Waine | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $10,000,000$ |
| Michigan | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $50,000,000$ |  |
| Utah | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $4,000,000$ |
| Untal | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | $\$ 124,800,000$ |  |

Oring to the shortage and high price of labor and materials, to the lack of open top equipment on the raildoads and to the condition of the bond market, very little of this money as yet has been expernled.

During 1920 a total of $\$ 309,000,000$ of state highway bonds have been voted as follows:


## *Authorized November 2.

The Constitution of Kansas prohibited the State from engaging in internal improvements, but this difficulty was removed by the referendum at the recent election. That State may now pay one-fouth of the cont of not to exeed 100 miles of read in each somty and not to execed $\$ 10,010$ per mile.

The amount of bonds authorized in the State of Virginia was not fixed in the referemam mearure, but the Lewistature may, under the law, rote bonds to the extent of approximately $\$ 50,000,000$

During the last fear bond issuen heve been authorized in the rarions combties in the lonted stater amenting to approximately $\$ 36: 2,000,000$. The amounts authorized in
each State are indicated as follows:


Officials of the Burean of Public Rcads estimate that there is still available approximately $\$ 160,000,000$ of Federal aid funct. for allocation to projects in the various states. This, tegether with funds obtained from bond issues, from direct levies and other sources of state revenue, from county bond issues and appropriations will, it is estimated, make available for expenditure at present between a billion and a billion and a quarter dol!als.

The funds derived from state and local bond issues, however, and that to be received from the Federal Government will be spread out over a period of years, and it is doubtiful whetler mech more than one-half of this vast sum will be applied to the construction and maintenance of roads during 1921. Assuming that the expenditure will continue to increaze at about the same rate as those for the last two seare, it is estimated that there will be expended for road purposes during 1921 approximately $\$ 550,000,000$.

## FORD TOURING CARS FORD TRUCKS

Locally built closed bodies
Quotations on request


# TRUCKS SUPPLEMENTING STREET CARS 

China Needs Passenger Vehicles to Aid Government Railways

To students of the truck field, there are convincing arguments that a hig internationel new mathet awaits the moter truck in the field of passanger transportation, not in its jitney lus phase, Lut as a complement to present electric tolley lines, sedh passenger luses to be mum under control of pullic: utility compranies.

Such a need is hecoming more and more evident in China not only for the sumplementing of street railwars but also for interurlan services to connect with the Chinese Govermment Railways. Many projects of this kind are already being proposed.

To meet the demands and roquirements of those traction companies in the United States who are taking up the development of this now phase of passencer trimeportation by motor truck, the Pierce-Arrow company has developed a new type of motor bus, the first one of which has been put into active service in Buffalo, New York, by the company. This bus, mounted on a Pierce-Arrow two-ton dual valve chassis equipped with pneumatic tires, seats 25 passengers comfatally and in many respects is a brother to the modern street car.

The bus body is of steel and is fitted with all the known safety devices and modern conveniences, including electric lights, push buttons, a heating astem and window screens and shades. The riding qualities and seating arrangement are comparable to those of a Pullman coacin. The driver and passengers have clear vision on all sides. The bus attains a speed of 23 miles an l:our with ease, and is seid to handle well in traffic. Although eommodious, the bus: is of such design that it does not give the impression of bulkiness, and it conforms to state and city regulations.
"The electric railway industry," says Robert O. Patten, truck sales manager of the company, "has ome to regird the motor lus as an ally: not as a competitor. The bus enables the electric railway to give service in newly-opened sections without going to the enormous expense of laying tracks and investing in ners rolling stock. It likewise can be used to relieve the heavy passenger traffic burden during rush hours. By suming the buses on streets paralletin: the trolley streets congestion is avoided and the electric cars make faster licadway. In cities where trolley companies have added motor buses to their equipment, experience has shown that the hus servire is comparable in headway, speed, fare and transfer privilege and economy of oreration with the trolley service. Traction authorities are watching with interest the development of this rebicle." The first bus of this type is illustrated.

Trucks, as freight and passenger carriers, are a rital part of the daily life of Great Britain and America. The
following comment from "Automobile Topics," is the American viewpoint

If there is anything wrong about the truck business the evidence is most assuredly invisible. Drive where you will, in city or town of consequence, and the number of trucks encountered along the road, the variety and character of their loads, will naturally invoke the reflection, "How in the world could we ever get along without them? In what other way conld the building material, the produce, and all the commodities that go to feed and clothe mankind be handled were trucks to be eliminated?" As their use and usefulness increases, so will their number increase.

These observations are intended for those who see the truck business only as a business quiescent, its future uncortain, and the way of the truck maker and dealer a rough and thomy path. Trucks in use are increasing and must be msintained, scmetime replaced. The need for trucks is growing greater every moment, and if the manner of making or marketing them has proved unprofitable in the past, both manufacture and merchandising must be corrected. Siuch faults, however, Lave nothing whatever to do with the fundefiental soundness of the lusiness itself. The railrcads cannot possibly carry all the freight that is offered them-in most instances the freight which they handle, at one or both ends of the line is, in turn handled by motor tracks. Horse-drawn equipment is inadequate to modern demands. The motor truek, however, is an adequate form of equinment; that is why it is an increasingly important and lens anent fixture in the business life, not only of today, lut of the many tomorrows that are to come.

## FRANCE PREPARES FOR AUTO TOURISTS.

Among the inustries of France must be counted the tourist trade, tourisme in their phrase. So the men in charge of the financial affairs of the repul-lic set out to develop the tourist trade.

The first favorable condition was the magnificent system of highways which has been the backbone of France avell before Napolcon's time. To make these highways generally available, the authorities have instituted comTrehersire yrstems of motor bus lines, which act as fueders to the railways and insure that every interesting and beautiful section shall be open to all visitors and not merely to the man who travels in his own car.

On all these, literally, high roads, motorbus lines are running and when tourist travel really begins next year visitors will find France ready to care for them more fully than any European country has ever done in the past.

## A Stewart Truck Will Reduce Your Operating Costs

We can show you how to do your hauling

## better-cheapar-quicker.

BETTER-CHEAPER •QUICKER --a large order, but we can fill it, absolutely.

We base this assertion on FACTS-not beliefs.
In the STEWART truck--of a type and size to meet your needswe have the answer to your hauling problem.

Are you continuing to make the mistake of thinking of a truck in terms of first cost, rather than in terms of ultimate saving?

The STEWART truck takes the sting out of first cost, as its price is extremely moderate.

Staunchly built by one of the best companies in the world-made to give continuous service at low up-keep-easy to operate-of guaranteed materials and workmanship-that's the STEWART TRUJK.

Wholesale and retail distribution in China controlled by
H. S. HONIGSBERG \& CO., Inc.

40 Bubbling Well Road TIENTSIN

Shanghai
Telephone West 1234

# TIRE SURPLUS RAPIDLY DISAPPEARING 

## Goodrich Company Officials Predict Shortage This Summer

Tast September there was surplus of ten million tires in the Inited States, which was one of the reamons why the great factories at Akron curtailed output so radicall! But with millions of can owners busily on the joh :f wearing out tires-and wearing them cut four at at time--this: simplus has dwindled montil there is danger of an actus? shortage when the warm weather hrings an inclease of car uses.

Anlalytical survers comparing present consumption of tires with present production show indisputably, saly the rubber company statisticians, that reserve stocks will be almost entirely exhausted before spring.
"During the past few months since tire manufacturers curtailed production," says a B. F. (ioudrich Ponbleer ('o. announcement, "consumption of tires has greatly exceeded production. Great inroads have been made into the surplus of $10,000,000$ tires which was said to exist last Soptomber.
"According to 1920 auto registration figures, there are now 9,29 ,, 252 motor vehicles in use. Figuring conservatively, each car uses three and one-half tires per jear. In other words about $32,000,000$ tires are needed annually, or about $2,710,000$ each month, exclusive of those nceded to equip new cars.

I'roduction since last, September has been at the rate of met more than $8,0000,000$ tires a year, or about 660,000 ateh mombl.

Conscouently, $2,000,000$ more tires are being cananmud each month than are being manufactured-the producti nn mite being just about one-fourtin the rate of con:umption.
'Recent reductions in tire prices have stimulated buying. Experienced motorists recognize that this is the right saron of the year to buy tires. Those who are waiting for warm weather may not be able to purchase standard makes as by that time the full effect of the $2,000,000$-a-month difference between production and consumption will become apparent.
"The poscibility of a spring tire shortage is greatly increased by the open minter.. Countless mickorists drove their cars who formerly placed them in storage."

Officials of Akron rubber companies are optimistic regarding the outlook for 1921. They point out that the rubber industry was one of the first of the large industries to sense the retrenchment movement and curtail production accordingly, and hence will be one of the first to be favo: ably affected when normal conditions return.

## HOW TO DRIVE BACKWARDS

## Some Points to Remember that May Przvent Accidents

Most cinvers are aware of the danger of trying to drive a car quack! in reverse gear owing to the difticulty in steering the desired course. They attribute this, as a rule, either to inexperience, or to the apporently greator effect which movemert of the steering wheel has when the car is being driven backwards. The latter idea is a fallacy, since when the steering is fulty locked orer the sul may he diven either forwards or backwards, and will cbvionsly travel on an arc of the same cincle in both cases.

The real danger of driving lackwads lics in the tendency of the steering to suddenly fly over or to full lock on one side or the other unless a tight hold is kept on the wheel. This tendency is caused by the inclinetion giver to the pivot pins on which the strb axles tum. If lincs are drawn through the center of these $I^{i n}$ and extended they would touch the ground an inch or nose in front of the point of contact of the front wheels with the ground. Hence when the car is driven forward the front wheels tend to keep straight because they are in effect being trailed behind the pivot pins, and have what is known as "castor action."

When reversing, however, the opposite effect is experienced. The wheels are being pushed in front of the pivot pins, and directly anything causes them to deviate the smallest amount from the straight path they tend to swing over to the full extent on one lock or the other. This
has been the cause of many serious accidents, for if a car is reversed quickly, either on the level or downhill, the force tending to turn the front wheels becomes large, and may momentarily take the control of the steering out of the driver's hands. A golden rule is, therefore, "Never drive a car at all quickly in reverse gear, especially on the camber of the road or downhill, and in every case keep a tight grip of the steering wheel when driving backwards."

When manouvring a car it is, of course, possible to take fuil advantage of the ease with which the steering can ke swing over on reverse. Thus, in turning round in the road, always swing the front wheels over from one lock to the other when driving backwards, both at the beginning and the end of the cax's travel. In this way both greater speed and ease of manouvring will be attained than if the lock is changed when the car is moving forwards.

Anctler important point when reversing a car on a road which las a monounced slope or steep drop or falling embankment on one side of it is, "always to reverse the car away from the embankment, or op the slope, as the case may be."

Drivers only too frequently make the mistake of trying to turn the car with the back towards the edge of the drop, and a slip of the foot on the clutch or brake pedal in such circumstances may, and often does, result in' a bad accident.

## We are hauling for



## The Shanghai Ice \& Cold Storage Co., Ltd.,

 which is only one of our many contracts
## HOW ABOUT YOURS?

Phone Your Order To

## THE CHINA GARAGE Co.,

Operating

## C. G. C. TRUCK SERVICE

## HOW TO MOTOR, THOUGH POOR

Hints by Which Many a Dollar Can be Saved

Nany of those who motor for recreation now stand at the parting of the ways: they wonder whether they will be able to continte motoring or not. The fixed expenses-tax, insurance, ele., they can allow for: but the dollars here and there-the odd can of oil on a werk-end-the oreasis.mal spark flug-are the things that mownt up-the thinge that make the difference. In a wond, chance furehases are the fores of economy : and the man who wants to keep his rumning costs at a minimum must make no chance purchases. As regards the car, there is no necessity for it; but one finds one wants something on the road, one buys it, one forgets having bonght it and many grood notes get masited

Let us take some examples. There is no possible ex-(H1-0 for ruming short of oil, evell on a long tour. Oil should be hought in five-gatlon drums, and a quart can full always carried on the car as a mattery of course, just ats one carries a jack. A half-pound tin of greasie also. One should limy grease in 7 lb . tins. The foung motorist has got the hahlit of being spoonfed at his garage - a pound of grease and a quart tin of oil. If he runs short on the road-garages are everywhere now. The old-timer keeps his old habit of having ample supplies at home, and carries enough with him to see him home again. He is not always putting his hand in his pocket for odds and ends. He buys beforehand, and in bulk wherever possible. That is one of the first essentials of motoring economically.

There are two ways of looking at the cost of motoring : assuming a mileage and then estimating the cost, or taking a specified sum and then ascertaining the mileage that can be run on it. Quite a lut of recreative motoring can be done upon what seems a small annual mileage. Fifty miles every week-end for six months- 26 week-ends out of the 52 amount to only 1,300 miles a year. Even if one has always done 100 miles during a week-end it is infinitely better to cut one's mileage down to half than it is to cut off the car altogether. Indeed, motoring has been so ustual, no convenient, such an ereayday matter, that one has rather lost the pleasure of looking forward to a run-the pleasure that one used to have when runs came more rarely. In the old days many an eagerly-anticipated journey had to be foregone because of some untoward happenings in mechanism or with tires.

The prudent man who wishes to motor next seation on a small income will be laying in stores now. Fuel one chould not hoard-and, indeed, unless one has room for a great many cans it hardly pays-and gasoline is a steady expense that can be foreseen. It is things like oil, grease, half-a-dozen spark pluge, a set of lamp bulbs, a few odds and ends of tools-all the little etceteras-that he will be buying through the winter. Any neceseary repairs should be carried out before the spring-garages are least busy,
between Christmas and February; as a rule. It should be his aim to be well stocked up with everything likely to be roceded for the season's running.

This done, it may strike him that the cost of keeping a car is considerably less than he thought it was. Unless one liceps: careful moter accounts-and few men do thatit is rely difficult to dissociate the real motoring costs from - Hich really extrimeous ones as casual hotel expenses-the lunch here, the tea there: the drinks, and the tips. And he will probably chcose to economize during the coming season over there extraneous expenses-ard keer the car. If mot, he is ro true motorist.

## BUSINESS PICKING UP IN DETROIT

The crest of the slump has been passed is the opinion of a majority of dealers as indicated in the December improvement over that of November. Following are reports by the Packard, Hupmabile, Dcdge and Overland distributers.

Simos Sales Co. (Overland) says September was 10 per cent better than last three years; October was 5 per cent better than the last three years; November was 48 per cent less than the last three years and December to date 100 per cent better than Novmber. Guy O. Simons; the president, says that there are more orders on file for delivery in January, February and March than ever before.
H. W. Peter, general manager of the Packard branch sales, said last week was not as good as the same week in November, but prospects for an increase in January will be good followed by a greater increase in February and there will be a big business in March. Summing it all up, Peters said the greatest trouble the Packard Motor Car has, is their usod car problem. Every prospect wants to dispose of their old car before taking a new one.
S. E. Comstock, general manager, and T. J. Doyle, Dodge distributer, report an increase in December of 33-1/3 per cent orer that of November and $\$ 18,000$ more in revenues from used cars delivered in December than in those traded in. Doyle sold 47 used cars in November. The wholesale business is not so good because the upstate dealers are having trouble with the local banks. Reports from dealers and salesmen indicate -marked improvement in January, to increase in February and begin real business in March.

Williams and Hastings, Hupp distributers, said Decem. ber was not so good as November, but December is always the worst month in the year and prospects for January show marked improvement which will be steady until spring when the demaand will exceed supply.


## THE ALSACE "4"

II In response to the great demand for a motor car, built in the United States, and suitable for the China trade, combining Durability, Efficiency, Comfort and Economy, we offer the ALSACE which has recently arrived.
TThe ALSACE " 4 " is designed by expert engineers who not only know American standards, but"are familiar with the structural detail of European cars and the requirements of the overseas markets.

- The ALSACE embodies features found only in high class motors and eliminaies experimental innovations. It operates economically on modern fuels, a vital point, especially in China where the present high price of gasoline must be considered.
I Standard conservative units of proven merit known at home and abroad as the bost that tho United Slates produces, makes up this high grade composite car. Spare parts for these units are carried in stock.


## It Runs Like a Six!

## Sole Distributors For The Far East

## SHANGHAI MOTORS CORPORATION

## WOMAN MAKES TIENTSIN-PEKING TRIP

E. W. Frazar and Co. Help Motorists in North by Printing Rcad Map



At me? of the new cluy raat near An. Ping. 46 miles from Tientsin

Sotoring direme in Tientsin are agng just now orer enme frips that have heom nerotiated between that city and Peking, one of them in a car triven ly a women, Mhs. F. F. Snielman, wife of the manager for E. W. Frazer and Co., Nistributors for the Dodge car in North China.


Mrs. Spictman (center) first woman to arice " motor car from Tientsin to Pccking
This achievement is of historic signifiance, particularly in view of the fact that the long expected era of road building has started at last in China, with the result that in a comparatively short time a tiip by motor from Tientsin to Peking will be as commonplace as a trip of similar disance in America or Europe.

Tres. Spielman dhove one of two Dodge cans that made the trip, the other being in the capable hands of Mr. P. L. D. Plath. The actual running time between the two Frazar establishments- the one in Tient, in and the one in Pekingwias 5 hours and 33 minutes. This time, while very good, was not as good as could have been made had the motorists set out for a record. Their intention, rather, was to map the road between the two cities, and this was accomplished very satisfactorily. Speedometer readings were taken, and upon the retum to Poking a map waw prepared, showing the nod in detail with sheedometer reatings at evely turn. Copies of this map were printed and widely distributed for the benefit of motorists in north China, all of whom were
glad to get a copy. The Frozar company also got up a neat booklet about the trip, and in this a detailed account of the trip was printed, after the fashion of a ship's $\log$. Copies of these booklets; each containing a facsimile of the map, were widely distributed and caused no end of very favorable comment.

The two partics of motorists ran into all sorts of road conditions during the trip, some good, some bad and some indifferent. At one place they crossed a stream on the ice in lieu of the regular ferry, which was laid up for the winter. I he main traveled cart roads were used for most of the way, although there were stretches of new motor roads that relieved the tedium of traveling over the cart highways.

A letter to THE ORIENTAL MOTOR from Mr. Plath, manager of the motor car department of Frazar and Company, gives an account of the trip, and states that the purposes of the trip was to gather data and to find the shortest and hest road between the two cities. The letter fullows:


The Peking Party meets the travelers
Herewith a few notes in connection with our last road mapping trip from Tientsin to Peking, also some photos and a map.
(Continued on Page 86)

# CILVERTOWN wrote $S$ the words, cord tire, into the language of motorists. Then Silvertown performance raised the cord tire itself to its place of fame and honor. 

 GoodrichSilvertown

America's First Corn Tire

The B. F. Goodrich Rubber Cio., 39 Kiangse Road," Shanghai

H. S. Honigsberg G Co. Inc.. Exclusive Distributors for Central and North China Tientsin Shanghai<br>Peking

# THERE'S A KNACK IN HOLDING THE WHEEL. 

Many Accidents Result from Improper Holding of Steering Circle.

Inine cases out of ten the aremage motorist has "pisked "!" his kisenlucte of dringe a motor car and during this "pickine 'l" " pucers las acconstomed himself to a cortain mode of hoking the steering whed without any thought of whether there was a right or wrong way of doing it. Often the position isn't exactly comfortable, but it has bocome a habit and the driver sees no reason why it should be changed. However, there is a right and a wrong way of cuing everything and such a simple matter of guiding the diroction of a motor car can be made more safe by the application of the right principles. For safety's sake alone the driver should have absolute and constant control over the steering. The majority of accidents can be averted by a swerve, so that the hold on the wheel should be at once secure and definite. In times of emergency the steering should be moved mainly by instinct, leaving the mind free to deal with the other problems. Therefore, a grip that is at once comfortable and powerful should be adopited and cultivated.

On long runs it is the hahit of many to lay the hand on the spokes. The least mechanically minded man must realize that the power of control is greatly lessened thereby, for the leverage is decreased and the full available force of the arm cannot be aprlied to its best advantage.

Lightly resting the fingers on the rim also should be discouraged, even when, the grip is increased by the pressure of the thumb. The writer was once passenger to a driver who only narrowly missed disaster owing to his thumb slipying off the rim of the wheel, which was wet, in a tight corner. Naturally, the most satisfactory way of grapping the wheel depends upon the reach of the column, the position of the seat, and the length of the driver's arm. It is always an advisable plam, however, to hold the control in such a way that the palm of the hand is in contact with the rim, and a spoke of the wheel passes between the first and seccond or second and third fingers, with the thumb underneath. Though the hand lays normally loosely, a contraction of the fingers immediately provides a "lock" grip which should be ample to suit any circumstances.

One of the beginner's faults is continually keeping two hands on the wheel. This practice is not to be recommended, for often in danger the car has to be turned and heavily braked at the same time, and if the left (or right in the case of centrally controlled cars) hand accustoms and develops itself to looking after the steering, the other one is free to attend to the brake.

From the point of view of comfort, control by the wrist is usually adopted, the rim being held near its lowest point: For power, of course, the palm should be upper-
most, the forearm straight, and the wheel gripped at its side. In this losition the best purchase can be obtained for holding the c:rr at sieed or on bumpy roads. Although the question of gripping the wheel may appear trivial, its consideration is one of several little points, usually overlooked, that, taken together, divide the motorist from the man who merely drives a car.

## NEW KIND OF SALESMAN NEEDED

## The Successful Ones of the Future Will Know Cars Better

A factory service manager recently made a very pointed remark reflecting on the knomledge of the average car salesmen. He said that from his observations made over an extended period of years the motor car salesman was far behind the car owner when it came to talking things mechanical abcut the car.

If the observations of this service manager are correct, then we are alcut to enter a new era in motor car salesmanchip. In industrial lincis the salesman pre-eminent must know his line. In fact he must be able to talk of his line with the same ease and fluency when considering the technical phases as he now does when considering the broad generalities. Industrial salesmen are now sales engineers, capable not only of clinching the argument and putting the deal over, but also capable of installing the cutfit sold. A certain sales engineer sometime ago consummated a deal irvolving large sums of money, in which his factory undertook to supply the entire machinery equipment for a new company, and when the time came for the machinery to be installed the salesman was there in overalls and directed the work of installation, according to the klueprint layout which he had made.

If the sales forco of the future motor car dealer is to render selvice as described above, the salesmen must familiarize themselves with the construction of the car, They must be able to talk of the serviceability of the chasis in the language of the service manager and thoy must be able to demonstrate with the tools just how adjustments are made, somcthing at which today the average salesman turns his nose up.

German automobile makers are said to have increased their carital 176,350,000 marks since March, fearing outside competition.

Passenger cars average about 300 gallons of "gas" a Year; motor trucks, 1,500 gallons.


TWENTY-ONE years! At the Grand Central Palace, New York, America's premier automobile show launched its twenty-first year. In a place of honor on the main floor of this historic salon, Auburn likewise launched its twenty-first year.


Through more than two decades of conservative progress, the makers of AUBURN Beauty-SIX have endowed your car with stability and character.
These attributes of permanence likewise mark the very principles which have invested the industry with greatness.
What could be more fitting than the expression of these mutual ideals, coincidentally ?
May we demonstrate?

## THE FRANCO-ASIATIC TRADING CO.

## EXCLUSIVE AGENTS FOR CENTRAL AND NORTH CHIN.

## 95 RUE MONTAUBAN, SHANGHAI, CHINA



# BRITAIN'S IMPORTS DECREASING 

## High Average Still Maintained-Exports Show Appreciable Advance

An analysis of the British Board of Trade rethon- for October is again interesting and complaths if the fismes reveal some remarkable changes in England: motor mation. Taking first imperts of motercars and pats therenf, inelloting chasses, it is found that womesed with the frableng month, september, there is a decrease in value of wion, (fis): the value being returned as follow :-September, $£ 2,590$,241 ; October, $£ 1,811,609$. Contrasted with October, 1919, however, there is a big leap upwards. In October, 1920, imported vehicles and parts wore imported to the value of $£ 1,811,609$, against $£ 614,545$ in October, 1919, an incre:s.s. of $\mathfrak{t} 1,197,064$.

It is intercsting to compare the 1920 Octolier figures with these for the same mont! in the pre-war sean :1 191:3. These are respectively $£ 1, \$ 11,609$ and $\pm 3 \times 6,166$, an increbe of $£ 1,42 \mathrm{~J}, 443$. The greatest increases are shown in the aggregate figures for the nine months ended October 31st. 'The 1920 figures for that period are $£ 20,778,411$, against $£ 3,606,617$, an increase of $£ 17,171,794$. Taking the prewar year of 1913, the increase shown is $£ 16,775,593$.

Turning to exports, the slight improvement recorded last month is maintained. Compared with Septembr, the October figures show an increase of $£ 92,060$. In September exported vehicles and farts went to the value of $£ 950,953$, against a value of $£ 1,043,013$.in October. Comparing the figures for the month of October in 1919 and 1920 there is again an advance, the figures being: October, 1919, £297,196 ; October, 1920, £1,043,013, which is $£ 745,817$ in advance of the previous year. Taking the month of October in the pre-war year of 1913 , the advance shown is $£ 651,973$.

For the nine months ended October 31st exports amounted to $£ 6,435,390$ in 1920 and $£ 1,975,838$ in 1919, the increase being $£ 4,459,452$. Contrasted with the nine months in the pre-war year of 1913 the increase is $£ 3,414,082$

Imports of gasoline were down during October by $3,-$ 063, 454 gallons compared with the preceeding month of September. Imports for the last month were $18,340,454$ gallons, against $21,403,584$ gallonts for September. There was also a decrease of $1,718,907$ gallons compared with October, 1919, 20,069,037 coming in during the month in 1919, contrasted with $18,340,130$ gallons for the same month in 1920. Aggregate figures for the nine months ended October 31st are : 1919, 175,775,029 gallons ; 1920, 169,726,063 gallone, a fall of $6,04 \times, 966$ gallons. 1)uing October duty: was paid on $18,660,584$ gallons, and for the nine months on $164,776,518$ gallons.

The greatly increased use of gasoline to-day in England is shown by a comparison of 1920 import figures with thowe of 1913. For the nine months in 19:20 the import - Nere $169,726,063$ gallons, against $85,857,078$ gallons for the same period of 1913, an increase of $83,868,985$ gallons, practically double.

## What would be the best Location for a IMotor Show in Shanghai?

(Continued from Page 15)
in w : aromn THE ORTENTAI, MOTOR office to imagine any such calamity. In such cities as Oakland, California, and I, misvili, Ky, the automolile dealers - in this year of industrial depression-spent $\$ 30,000$ and $\$ 25,000$ gold, respectively, for decorations alone, to say nothing of What the? Were set lack for the hire of ten-dollar-a-day wh wictun", phmbers, mechanics, carpenters and fluret $\therefore 111,1$, for what were, atter all is said and done, enly :rent or thand chas: shows compared to the New York an! ()|ruly iat whe. Ind ont heie we could put on a show thit If 1.1 . mut? and magnificance would actually sumpass either of thus shows, becallse we could have our show in a settir. d $^{3}$ that flay : "uldn't luy at any price in Now York and I.onc? Also a thow, if we go about it the right way, faliculnly in the netter of obtaining the suppost of the manufacturers in the way of exhibits, would be the equai (i) the lig time display: in the mattor of mechanical anis cach work dimplays.

There are plants right here in shanghai in which the: finest ccachwork is turned out every day ; coachwork as fin? as you rill sce in London or New York. All we need is some cut cut chassees to make a show that would be complete in every sence of the wond.

THE ORIENTAL MOTOR believes that if the manufacturers were approached they would see the value of such a display here in Shanghai, and that they would lend their fall suppeat, not only by sending cut-out chasses, but by contributing, each a small sum, toward staging the exhiciticn. They are all keen in the home countries, just now, about developing the foreign market, and this would give them a chance to do exactly the thing they have been talking about for so long. And not only the car companies, bui also the truck makers and accessory makers, including tha big tire companies. These latter are more aggressive, if anything, than the car companies in the way of reaching out for new markets. We see their advertisements where ever there is white space on which they can be blazonel. They have their representatives hero-hustling, wide awake chaps, all of them, and undoubtedly these companies would "kick in" their pro rata sharea sum so small compared to what they are accustomed to paying for advertising, that the only danger in mentioning it to them would be the possibility that they, might think somebody was trying to kid them into believing that you can get something for nothing in this world despite the asseltions to the contrary by numerous well known rnd justly celebrated economic sharks.

All the foregoing is set down here mainly by way of giving the dealers and distributors and others interested sonsething to think about previous to the meeting that it is proposed to call in the near future, for a general dis cussion of the subject in all its angles and ramifications ${ }_{\star}$


# TEAGLE DISCUSSES WORLD GAS SUPPLY 

Standard Oil President Says There Will Always Be Plenty

If the matter of ample petroleum supplies is not the world problem to-day, it most at least be included among the few really big question on which thinking men the world over are spending a good deal of encrgy. iralter ('. Teagle, prevident of the standard Oil (o. (N. J.), gave roice to this thought recently before the annual meeting of the American Petroleum Institute at Washington, D. C. The world's petroleum situation existing today is this, according to Teagle :

The demand is keeping pace with production and bears every promise of expanding in future as rapidly as more crude can be supplied. It is a conservative estimate that the world consumption, which in 1910 took $327,000,000$ barrels, and this year is using $615,000,000$ barrels, will call for close to $700,000,000$ barrels in 1921.
"Domestic production," said Teagle, "is holding up remarkably well. Nevertheless, in 1919 the United States imported nearly $60,000,000$ barrels of crude oil. When the current year's figures are complete they will probably show imports of nearly $120,000,000$ barrels. Indications are that in the current year we shalll produce within our own borders $445,000,000$ barrels, and consume, with Mexican imports, a total of $565,000,000$.
"The figures matter little, but the tendency is all important. It emphasizes the relatively smaller part our home production is going to play in the future. Our British friends, in endeavouring to explain the position their Govern ment has taken since the armistice, have argued that, as the United States is now supplying 70 percent of the world's current production, we should be well content with thinge as they are. This is an entirely fallacious view. They should restate their deduction in this way: The United States is now spending its petroleum wealth for the warld's benefit, to meet 70 percent of the world' $s$ present demand.
"Americans have done this primarily because they had the most accessible oil and the facilities for refining and distributing it. Is it reasonable, however, to ask that they go heedlessly on to the quick exhaustion of their supply, and then retire from the oil business?
"The American petroleum industry cannot accept such a conclusion. On the contrary, it must look to the development of production outside the United States to supple. ment the supply from domestic fields. Domestic crude is not sufficient even for current home needs, and it is absolutely imperative that American petroleum producers proceed actively and intelligently to develop oil resources in foreigu lands.
"While enjoining this policy upon American oil men and confiding in their individual energy and ability to carry it out, we cannot close our eyes to a portent of obstruction
that looms in the way. In the Tinited States there has been from the beginning an open field for the citizens and the capital of all nations without discrimination. But when we turn our eyes abroad we see today certain governments, their realization of the importance of petroleum quickened by the war, but without experience in conduct and management of the industry in time of peace, not only essaying to enter the oil business themselves, but also directly to engross the sources of supply and to reserve the development of such sources to their own citizens, companies and capital.
'If foreign governments insist on pursuing the policy of nationalizing oil lands and reserving subsoil rights to be beld under government direction; if they persist in attempting to keep all of their own petroleum deposits for their own future benefit, while relying upon the United States for a large share of their present day needs, then, and in that event, this nation will have no alternative but to take cognizance of the attitude of foreign governments, and as a matter of necessary self-protection to consider the adoption of measures reciprocally to conserve its petroleum resources for its own people. It is to be hoped that the United States will never be forced to take such a step by way of selfdefense. This Country has always acted on the principle that petroleum, being one of the world's vital necessities, should be produced under such restrictions only as are essential to conserving the public's rights, these restrictions being applicable to citizens and to aliens alike."

## MEETING THE USED CAR ISSUE

## American Firm Adopts Novel Method of Solving Problem

Winter season for some car dealers is more or less of a bugaboo by reason of the stock of used cars which are prone to depreciate in value especially if they are carried over from the end of one calendar year to the beginning of the next. In the opinion of Earl M. Taber, vice president of Russell P. Taber, Inc., Hartford, Conn., there is just one way to dodge this issue and that is to pass up trades entirely. The Taber establishment for a long time past has accepted old cars as part payment for new.

Used cars are taken in and sold by the used car department manager and the customer's account is credited with the amount derived though the firm assumes no liability to move the car should it prove a tough one to dispose of advantageously. Up to date the firm has not slipped on selling used cars, in fact it passed out $\$ 25,000$ worth of them for its customers in August. But to all intents and purposes none of the firm's money is tied up in these cars.


SHOWING a lorry chassis on final test with a $3 \frac{1}{2}$ ton load. Each chassis after being erected goes for a road test of several miles over country which gives excellent tests of the hill-climbing capacity of each machine, and also supplies natural hills for brake testing, etc.

We shall be pleased to demonstrate

## THECHINA GARAGECOMPANY

Exclusive Agents for Central China

## HONGKONG HOTEL GARAGE INSTALLS BRAND NEW "AUTO FLEET"



## "Line up" of new" Hongkong Hutel (iarrye. Hongkony, comprising thirteen Studebaker "Biy Sixes"

## HATPIN SAVES DAY FOR MOTORIST

## For Once the Value of Feminine Advice Was Proven

Some female passergers are useful, others merely ornamental. A car that gives trouble is an anathema to the ardent swain, but sometimes the occupier of the passenger seat provides a remedy for it. A case in point. Tommy . Tones tonk delivery of his new car on a cold and chilly Saturday morning. Having duly exhibited it with pride to the admiring family and picked up his passenger, he started ont. Taious conghs and bangs from the canbureter and sluggishness on the part of the engine he attributed to the engine being cold. But when steam issued from the radiator he knew the jet was too small. As usual, there were no spare jets. The three garages whereat he called stocked no reamers. Other cars fled by him on the road. and his pride evaporated and chagrin increased. In desperation he bethought himelf that hy filing down the end of a nerrously-borrowed hat pin-resting the file on his spare wheel-something might be done. It worked, and the engine proceeded to display its gratitude by providing enough power to enable him to overtake some of those who previously scoffed back at him over their shoulders. The tip is given for what it is worth in emergency. But remember that a very small increase in jet size makes all the difference betreen too weak and too rich a misture.

## HINT FOR USED CAR SALESIMEN

## How One Firm Successfully Disposed of Machines

Mr. Prospect walks in, has a talk with one of the salesmen, and decides that this or that car pleases him. He pays the amount stipulated in the placard on its windshield. The payment secures the car for him. The car is then taken from the row and placed in the company's storeroom. There it remains until the purchaser has in monthly or bimonthly payments paid to the company a sum equal to onethird or one-half, as the case may be, of the selling price.

Then the car is delivered to him, it having been, in the meantime orerhauled and put in good rumning shape. When the car is delivered the purchaser receives from the company seven per cent interest on the amount of his original payment and his sulsequent installments. He may have this money in cash or let it apply on the balance he still owés on the car. The remainder, to be paid before his debt to the company is discharged, he makes in regular payments.

Last winter the company-sold fifty used cars by this plan. This fall the plan has been in operation only a few days but already the company has gotten rid of several cars through it. The plan is liberally advertised by means of daily classified and display ads in Buffalo's newspapers.

$Q^{\text {UIETNESS is a quality }}$ which contributes much to motoring satisfaction. Owners like a quict motor and a car that is as free as possible from rattles and squeales. This is undoubtedly one reason for the popularity of the Nash Six wherever it is in service.

## Value Above the Ordinary in the Poweriul Nash Six

BYUERS seem to realize that the Nash name on a motor car is an assurance of value above the ordinary.

They recognize that it has proved unusually powerful. quiet and economical in the hands of owners. This is clearly indicated by the heavy and continually growing nation wide demand.
This demand is unmistakable evidence that the Nash Six is now generally accepted as being an uncommonly wise motor car investment and that the public has been quick to appreciate the many distinct superiorities of the Nash Perfected Valve-in-Head motor-
In addition to Nash passenger cars there is a full line of Nash trucks including the famous Nash Quad
You may own a NASH eventually-why not now. Call at our showroom and surprise yourself.

5-Passenger Touring Car, 7-Passenger Touring Car, 2-Passenger Roadster, 4-Passenger Sport Model, 4-Passenger Coupé, 7-Passenger Sedan.

## Sole Agents for China

## Wah Chang

TMain Office, 9 Ningpo Road

## CORPORATION

Showroom 4-5 Bubbling Well, Phone 5961


## COIL UNIT BECOMING POPULAR

## Magneto Is Slowly Gainiog Way to Alternative Ignition System

One of the many interesting features of the recent Olympic Show was undoubtedly the coil ignition unit. When first introduced, a great many peorle shook their heads and contended that there was no use for it, as no one could wish for a better ignition spark generator than the up-to-date magneto. Granted that the magneto is, in general, an excellent machine for the purpose for which it is designed, it is well known that it falls short of perfection in a few points, and though not complicated in principle, it is actually a complicated and expensive machine to produce. It has to be separately driven and occupies a goodly proportion of strictly limited space.

Had it not been for the introduction and universal ase of dynamo lighting on cars the coil unit would never have been heard of, and the magneto would have had the field to itself. But the fact that every car nowadays has a reliable source of current always available introduced an entirely new factor into the question of ignition. There is very little difficulty in combining a small high-tension distributor and a contact breaker with a dynamo, this, it is assumed, being positively driven and not having a belt drive. A small coil which can be placed almost anywhere convenient to the engine and a connection made respectively to the accumulator and the distributor provides everything needed for ignition. The simplicity and effertiveness of the arrangement was bound to make a strong appeal, and many of those who were very sceptical at first, and who said there was no use for it, had eventually to admit that they could see nothing against it, and that it might be taken up on the score of cheapness, if nothing else.

The coil unit has justified itself and thousands of the latest cars have it fitted, and the results obtained with it are everywhere spoken of as "excellent." In the United States the last figures available showed that there were as many coil units as magnetos fitted to cars, and now it is probable that the magneto is in a minority. It need not be assumed that the position of the magneto will be seriously challenged, perhaps for some years in England, but it cannot be expected that it will have the whole field to itself in future.

It is not necessary that the distributor and make and break should be combined with the dynamo, as an entirely separate unit can be used consisting of the coil and the other two parts referred to. These are fitted on a suitable base and directly driven. It is then immaterial whether the dynamo is driven by gear or belt.

It may be asked "How does the coil unit spark compare with that of the magneto in effectiveness?" The results obtained up to the present are equally as good as those of a magneto. The coil unit gives a single spark at each break, the primary being energized from the accumulator
when the contact breaker closes the circuit. It does notmatter how slowly the contact breaker operates, the spark is bound to be effective, and up to the highest speeds reached in practice the spark remains effective. In tests it has been shown that at 4,000 revs. the spark gives good firing, froving that the current is quite capable of energizing the coil in an exceedingly small period of time sufficiently to produce an effective spark, whereas it might be reasonably expected that the reverse would be the case, owing tomagnetic and electrical "lag" at high speeds, as it must. take a certain time for the current to produce sufficient magnetism in the core, this magnetic field then being: caused to collapse suddenly when the contacts "break." With only a partially developed magnetic field, the spark would be weak and tend to misfire. In the case of a coil unit no question arises as to the amount of retard and advance, as the factor which comes into play to limit the amount in the magneto is non-existent in the coil, as there is no rotating armature in a variable magnetic field to consider, consequently any desired amount of advance can be given.

For ease of starting the coil unit, as might be expected, shows up particularly well. The current consumption is small enough to be negligible and gives the accumulator a little useful work to do when it would otherwise not be in use. Furthermore, even a run-down battery would always. have sufficient voltage left to be able to operate the coil and get the engine running by hand, the dynamo commences to charge and the coil at once gets its normai supply ; consequently, there is only a very remote possibility of there being a failure of current due to an exhausted battery, as the "fully discharged" voltage of 1.8 volts per cell is ample to set the coil until in action, whereas for lighting or using. the starter the voltage would be useless.

A feature in whicli the coil unit shows to advantage is in the very small amount of attention necessary to keep it in good order, even less than a magneto requires, and, as is well known, this is almost negligible. An ample condenser in the coil prevents sparking and wear at the contacts, and as the distributor is usually of the spark-gap type, there is no wear and tear of the parts. Re-magnetizing, which is necessary in the case of a magneto after several years' use, is eliminated in the coil unit.

## MICHELIN REDUCES PRICES.

Reductions ranging from $7 \frac{1}{2}$ to 15 percent have been made by the Michelin Tire Co., Milltown, N. J. Cord casings have been cut $7 \frac{1}{2}$ percent; fabrics and all Michelin ring-shaped tubes, 10 percent, and all soft bead clincher fabric casings, 15 percent.

# THE ADVENTURES OF GASOLINE GUS AND KOO, THE COURTEOUS COOLIE 

BY CASTLEFIELD

(3)


Speaking of Cumshaw, How much can a wheel borrow?


## THE FAN BELT IS IMPORTANT

Cooling Depends Solely on the Operation of This Worker

The proper working of the fan at any engine speed, and hence the suction of the right amomen of air to cool the water in the radiator, says Buick, depends solely on the fan belt. It is, therefore, inimortant that the fan belt he kept in good working order.

When installing a fan belt, the first thing to do is' to see that the pulleys are in line. This may be determined by placing a straight edge across the face of both pulleys at the same time. If the pulleys are out of their proper place, the upper pulley may easily be adjusted.

By foreming the fan spring tension and allonving the fan to drop to its lowest position, the belt may be worked atound the crank-hat prolley. It is alway-advisallie to flace the belt in pasition ly hatnd, never using harpe twots for this purpose.

The neat =tep is to ravee the fan until the leelt is tiecht ; then turn down the spring tension adjustment nut. With this done, in order to determine the proper tension on the belt, press on the blades of the fan with the fingers. The fan should turn easily, yet not spin. The spring tension should be adjusted to give this result.

INire fan helt trouble results from belts being too tight rather than too locse. A belt that is too tight has a tendency to draw one of the pulleys out of line, causing the belt to run against the flange of the pulleys, fraying the edges, and at high speeds, climbing the flange and destroying itself. With the proper tension in the belt, there should be no appreciable wear in either belt or pulleys.

## "COMMER CAR" TRADE BOOSTER COMING

With a riew to dereloping "Commer Car" sales overseas Mr̀. S. B. Brett, the Overseas. Representative at Commercial Cars Ltd., Luton left England in December for a tour of India, Straits Settlements, Far East, Australia and New Zealand. Mr. Brett will be pleased to hear from members of the Motor Trade in these countries and any communication for him should be addressed :-S. Brett, Lisq., Representative of Commercial Cars Ltd., c/o Chartered Bank of India, Australia and China and marked "To Await Call."

We append the approximate dates of Mr. Brett's arrival and departure.

Singapore Batavia and Sourabaya Hongkong and Canton Shanghai
Yokohama and Tokio

March 27 th ...... April 10th April 16th ...... May 4th May 16th ...... May 31st June 7th ...... June 21st June 29th

There will be a big automobile, truck and accessory show in Shanghai next fall!

## TRUCK SERVICE IN SHANGHAI SOLVES HAULING PROBLEM

## : How One Company. From Sm』1 Start. Has Grown Until it Now Has Fleet of 30 Trucks



A"

AN Ifled of the measure of success achiered by the China Gorage Company's truck service is furnished in the fact that it was necessary to trail P. H. Neubourg, manager, for several days before he could be induced to take enough time from his work to tell about it.

The strides made by this company should be an eyeopener to those who still cherish doubts about the rapidity with which china is becoming modernized. Prerious to the establishment of this company, the primary business of which is to furnish truck service, a great many people would have said that "it couldn't be done:" This opinion would have been based on the fact that the cheapness of coolie labor, of the kind used for hauling, constituted a handicap that nobody could hope to overcome with mechanical means, due to first cost, upkeep and depreciation of the latter.

The China Garage Company analyzed this situation, and decided that it could be met, not by doing the work cheaper, but by doing it better and quicker.

It was on that hasis and with that theory in mind that the China Garage Company started in business two years agon. It wats never imended by the management of the company to wht hauling conse in shanghai, hecaluse wheme unskilled labor is a drag on the market it is pretty harel to figure an! appreciable cut in the const of the rervice that kind of labor supplies.

The mgatizers of this compary saw, howewe that Shanghai needed something more than merely cheap serrice. They saw tha! busmesses loce were in need of a hauling service that could deliver goods and merchandise with promptness and despatch, and with the absolute minimum of lough handling. These men believed, in is word, that business men who were accustomed to certain hauling methods in their home comntries would apmeciate similar methods in China, and further, that Chinese business


Interior of the China Garage Company's main building
men, once they saw the advantages of the quicker and better hauling that can be accomplished with trucks, would recognize the superiority of that kind of service.

They were right in both surmises, as is attested by the fact that the company has found it necessary to steadily increase the number of trucks in its ever growing "fleet," so that today it has thirty trucks in service, ranging from little fellows of three quarter ton rating to giants with a dozen times that capacity, and including one "super dreadnought" with a derrick attachment for heavy lifting.
'Nothing more clearly proves that Shanghai is progressive than the fact that the demand for truck service has been equal at all times to our rapidly increasing facilities," said Mr. Neubourg. "In fact, there are times when we are hard pressed to meet the calls that are made


A traveling inspector keeps an eye on the service at all times upon us, despite the fact that we now have thirty trucks in service.
'Foreign business men, of course, are quick to appre(aite the many advantages of truck service, because they are appreciative of those business methods which are based (1) the principle of getting the thing done, properly and

quickly. Some of our Chinese friends naturally were not so quick to adopt the more modern hauling method, the Chinese merchant and business man being conservative by nature. They demanded to be 'shown' first. The old rule that 'seeing is believing' applies in China as elsewhere, however, with the result that we are gaining a constantly increasing Chinese clientele."

The China Garage Company has the utmost faith that modern methods of doing business will come more and
"ads" being as attention compelling as any seen in the Shanghai newspapers. In its advertisements the cartoon method of expression is used, and there isn't a newspaper reader in Shanghai who hasn't at some time or other felt sorry for the pictured wheelbarrow coolies struggling hopelessly in competition with the big swift trucks of the China Garage Company.

These advertisements, too, have shown in a graphic way that truck hauling is far superior in every way to the


The "super dreadnought"
"ith dirvick attachment
fine herat! humlimu jolis
more into favor in China, as is evidenced by that fact that the company, in addition to asking other business concerns to be progressive, is itself progressive. The company's hig garage is conducted along the most mokern lines, with an up-to-the-minuto sopair department, staffed with competent. mechanics, and a complete and well equipped stock room.

The company advertises ite service constantly, the
ohd methods still in vogue to ath mbertmately barge dent in Shanghai.
". I truck somion," sad Atr. Acolbourg. "must operate on a fate hasis, whether in chana or :any other comente When you go to at man to talk hatuling you have got to put gour cards down on the table, and these cards mast shaw

[^64]
## AMERICAN SPECIFICATIONS AND PRICES

Several new Cars have come into the field with the year of 1921. Prices, however, remain stable. This list includes the latest announcements received up to February 10. I'rices yuoted are in gold dollars, F. O. B. Factory. Specifications and prices quoted are on stock models exclusively, und do not show differences necessituted by midions to or alterations in equipment on export cars.

They ulso do not inchde crating, milway umi ocen freightuge, insurance or other similar items.


ACE $6.31 \times 5$
AIILEN

ALSACE
AMERICAN ${ }^{4.33 \times 5}$ Bosch Dyneto 116 32x4 SS ...... 148.5
$\begin{array}{llllllllll}\text { B } \\ \text { ANDERSON } & 635 \times 5 & \text { A.Kent Wsths } & 122 & 32 \times 4 & \text { Sis } & 2395 & 239.5 & 8.24 .5 & 349.5\end{array}$
$\begin{array}{lllllllll}5-30 & 6-3 ł \times 4 \frac{1}{2} & \text { Conn Remy } 120 & 33 \times 4 & \text { SS } & 2195 & 2145 & 2195 & 3200\end{array}$ APPERSON
8. $20 \quad 8 \cdot 3+3 \times 5$ Remy Bijur $130 \quad 34 \times 4 \frac{1}{2}$ SS $3350+35.50 \quad 3500 \quad 4200$

ARGONNE
AUBURN ${ }^{4-39 \times 5}$ Eisman..... 118 $32 \times 4$ SS $4500+4700 \quad \ldots$
$\begin{array}{lllllllll}\text { 639.H.\&K } 6-3 ł \times 4 \frac{1}{2} & \text { Remy Remy } 120 & 33 \times 4 & \text { SS } & 1945 & 189.5 & +189.5 & 299.5\end{array}$ AUSTIN
BEGGS
BELL
BIDDLE
$2 \cdot 2 \frac{2}{8} \times 4$ Remy Kemy 142 34x4支 is 6500 ...... 6500

BIDDLE
BOUR-DAVIS

BRADLEY
$\begin{array}{llllllll}4 \cdot 3 \frac{1}{2} \times 5 & \text { Conn Wsths } & 116 & 33 \times 4 & \ldots & \ldots . . & 1370 \\ \text { BREWSTER } & \text { Werling USL } & 125 & 34 \times 4 \frac{3}{2} & \text { SS } & \ldots \ldots & 7400\end{array}$
BRISCOE
$1920 \quad 4 \cdot 3$ 33 $\times 5$ Conn A-Lite 109 30x4 QD $1285 \quad 1285$ BUICK

CADILLAC ${ }^{2} \times 4 \frac{1}{2}$ Delco Delco 124 34x42 SS ..... ...... 20653295
$\begin{array}{lllllllll}59 & 8-3 k \times 5 \frac{1}{k} \\ \text { CAMERON }\end{array}$

| 45 | $6-3 \times 1 \times 4 \frac{1}{2}$ | Conn |  | 108 | $32 \times 4$ | $\ldots$ |  |  | 1700 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 55 | $6-2 \times 8 \times 4 \frac{1}{2}$ | Conn | Bijur | 118 | $32 \times 4$ |  |  | 2000 |  |
| CASE |  |  |  |  |  |  |  |  |  |

CHALMERS $\quad$ Delco Wsths 126 . 120

K.O. $\quad 4-3+2 \times 5$ Delco 6-34x4d Delco
$\begin{array}{llllll}\text { Dyneto } & 116 & 32 \times 3 \frac{1}{2} & \text { SS } & 1350 & 1330\end{array}$
Delco $118 \quad 32 \times 4$ SS
CHANDLER
CHEYROL-32x5 Boseh
$490 \quad 4-3+1 \times 4$ Remy A-Lite $10230 \times 3 \frac{3}{3} \quad 795 \quad 820 \quad \$ 1375$
F-B 4-3tix.5t Remy A-Lite 110 33xt SS 1320 1345
$\begin{array}{lllllllll}\text { CLEVELAND } \\ 6.3 \times 4+4 & \text { G\&D } & \text { G\&D } & 112 & 32 \times 4 & \text { SS } & \ddagger 1435 & 1435 & \ldots \ldots . \\ 2445\end{array}$
COLE, Aero- Eight
$\begin{array}{llllllllll}870 & 8-3 \frac{1}{2} \times 4 \frac{1}{2} & \text { Delco } & \text { Delco } & 127 & 33 \times 5 & \text { SS } & 32.50 & +3250 & 32.50 \\ \text { COLUMBIA }\end{array}$ COLUMBIA

## COMET

C-53 6-32x5\} Wagner Wagner $125 \quad 32 \times 4$ SS
COMMONWEALTH
$4-40 \quad 432 \times 5$ A.Kent Dyneto 117 32xt SS ...... 159.5 +178.52465 CRAIG-HUNTT
CROW-ELKHART
L-5.5 4-3tx5 Conn
$\begin{array}{llllll}\text { Dyneto } & 111 & 32 \times 3 \frac{1}{2} & \mathrm{SS} & \ddagger 1195 & 1195 \\ \text { +1345 } & 1995\end{array}$ CUNNINGIIAM
59-A 8 -33x.5 Delco
CYCLOMOBILE $2-3 \frac{3}{2} \times 3$ A. Kent Own $9026 \times 3$... 425
DANIELS
D. $19 \begin{array}{lllllll}19 & 8-3 \frac{3}{2} \times 5 \frac{1}{2} & \text { Delco Delco } 132 \frac{1}{2} & 34 \times 4 \frac{1}{2} & \text { SS } & 4850 & \ldots . . . \\ 48.50 & 6000\end{array}$ $51 \quad 6.3+3 \times 4 \frac{1}{2}$ Delco Delco $120 \quad 33 \times 4$ SS ...... $189.5+2150 \quad 279.5$ DISPATCH

DODGE $4.3+\times 5$ Comn
Drneto $112 \quad 3 . \mathrm{x} 4$ SS $\quad 1.570 \quad 1595$
BRTHER
DORRIS

 DUPONT
$4 \cdot 3!\frac{6}{6} \times 5 \frac{1}{8}$ Eisman Wisths $12432 \times 4 \frac{1}{2}$ SS
$+4010$

## Model Motor Iknition $\begin{aligned} & \text { Starting } \\ & \text { Lirhting }\end{aligned}$ WB Tires Rims Pass. $\begin{gathered}\text { 2- } \\ \text { Pass. }\end{gathered} \quad \begin{gathered}\text { 5. } \\ \text { Pass. }\end{gathered}$

## DUESENBEIRG

\&. $2 \frac{2}{4} \times 5$ Delco Delco $13434 \times 4 \frac{1}{2}$ SS
ECONOMY
6.46

ELCAR
4 4.31×5 Deleo
ELGIN
$\begin{array}{lllllll}6-K & 6-3 \frac{1}{8} \times 4+4 & \text { Wagner Wagner } 118 & 33 \times 4 & \text { QD } & \text {...... } & 1775 \$+1895 \\ 2685\end{array}$
ESSEX
AERRIS $4-3 \frac{9}{8} x .5$ Delco Delco $108 \frac{1}{2} 32 \times 4$ SS $1595 \quad 1595$...... 2450
$6.3 \frac{3}{2} \times 5 \frac{1}{2} \mathrm{Own}$ L-N $130 \quad 32 \times 4 \frac{1}{2}$ SS.....
$\begin{array}{cccccccccc}\text { FORD } & \text { (With Electric Starter) } \\ \text { T1920 } & & \\ 4-34 \times 4 & \text { Ford } & \text { Own } & 100 & 30 \times 3 \frac{1}{2} \mathrm{r} & \text { C } & 465 & 510 & \ldots . . . & 795\end{array}$
$\begin{array}{lllllllll}\text { FRANKLIN } \\ 9 B & 6-3+4 \times 4 & \text { A.Kent Dyneto } & 115 & 32 \times 4 & \text { SS } & 2500 & 2600 & \dagger 2700\end{array} \quad 3600$ GARDNER
G ${ }_{G}{ }^{4-3 \frac{1}{2} \times 5}$ Wsths $\quad$ Wsths $112 \quad 32 \times 3 \frac{1}{2}$ SS $\ddagger 1195 \quad 1195$...... 2145
GLIDE
$6-40 \quad 6-3 \frac{1}{8} \times 5$ Wsths Wsths $119 \quad 32 \times 4 \quad$ SS $\dagger 16951695$

2450
 HALS. $4-3{ }^{3} \times 5 \frac{1}{2} \frac{1}{2}$ Delco Delco $120 \quad 32 \times 4 \frac{1}{2}$ SS $292.5 \dagger 2975$ HALLADAY
$\begin{array}{lllllllll}22 & 6-31 \times 4 \neq A . K e n t \\ \text { HANDLEY-KNIGHT }\end{array}$ (ANET
$4-4 \frac{1}{8} \times 4 \frac{1}{2}$ Conn A-Lite 125 32x4 $\frac{1}{2}$ SS ...... ...... 2985 HANSON
$54 \quad 6-33 \times 4 \frac{1}{2}$ Delco Delco $121 \quad 32 \times 4$ SS $2365 \quad 2365$...... 2885 HARROUN
A-1 $4-3 \frac{1}{4} \times 5 \frac{1}{4}$ A.Kent Remy $10630 \times 3 \frac{1}{2}$... $\dagger 1095 \quad 995$...... ......
$42 \begin{array}{lllllllll}42 & 4-34 \times 5 & \text { Conn } & \text { Dyneto } 115 & 32 \times 4 & \text { SS } & \text {...... } & 1695+1695 & 2595\end{array}$ HAYNES
$45 \quad 6-3 \frac{3}{2} \times 5.5$ KingstonL-N $\quad 132 \quad 34 \times 4 \frac{1}{2}$ SS $\dagger 3185$
$46 \quad 12-23 \times 5$ Delco $\quad$ L-N $\quad 132 \quad 34 \times 4 \frac{1}{2}$ SS $4200+3635$ HOLLIER
206-B $\quad 6-3 \frac{3}{4} \times 4 \frac{1}{2}$ Remy Wsths $120 \quad 33 \times 4$ SS $\dagger 19851985$
HOLMES
$1 \quad 6-3 \frac{1}{2} \times 44$ Holmes Dyneto 126 34x42 SS ...... $\dagger 305031004000$ Super-6 6 -33 $\frac{1}{2} \times 5$ Delco Delco $125 \frac{1}{2} 34 \times 4 \frac{1}{2}$ SS $. . . . .{ }^{2}+2435 \quad 2435 \quad 3200$ HUFHMAN
6. $37 \times 4 \frac{1}{2}$ Conn Dyneto 120 32x4 $\quad$ SS 19951995

HUPMOBILE
$\begin{array}{lllllllll}\text { R-3 } & 4-3 \frac{1}{4} \times 5 \frac{1}{2} & \text { A.Kent Wsths } & 112 & 32 \times 4 & \text { SS } & 1686 & 1685 & \ldots . . . \\ 2800\end{array}$
6-3łx4 $\frac{1}{2}$ Remy A-Lite $121 \quad 33 \times 4$ SS ...... $1950+2885 \quad 3750$
$\begin{array}{llllllll}6-28 & 6-3 \frac{3}{2} \times 5 \frac{1}{4} & A-L i t e & A-L i t e & 126 & 34 \times 4 & \text { QD } & 2750 \\ 2750 & 2750\end{array}$ JORDAN
$\begin{array}{llllllllll}\mathrm{F} & 6-3 \frac{1}{2} \times 5 \pm & \text { Delco } & \text { Bijur } & 127 & 32 \times 4 \frac{1}{2} & \text { SS } & \ldots . . & \ldots . . & 2875 \\ \text { II } & 3700\end{array}$ KELSEX ${ }^{6-3 \frac{1}{2} \times 4 \frac{1}{2}}$ Delco Delco $120 \quad 32 \times 4$ SS $2650 \quad 2650$...... ......
6-3衣x $4 \frac{1}{4}$ A.Kent Bijur 116 ...... ... 17501800 ...... 2700
$\begin{array}{lllllllllll}\mathrm{H} & 8-3 & \times 5 & \text { A.Kent Wsths } & 120 & 32 \times 4 \frac{1}{2} & \text { SS } & 2750 & \dagger 2735 & 2725 & 4235\end{array}$ KISSEL ${ }_{\text {KAR }}^{8-3}$
Custom Built $6-5 \frac{1}{1} 6$ $5 \frac{1}{2}$ Remy Remy $124 \quad 32 \times 4 \frac{1}{2}$ SS $\quad 3475 \dagger 3475 \quad 3475 \dagger 3975$ KLINE
$6-55 .-\mathrm{J} \quad 6-3 \frac{3}{2} \times 4 \frac{1}{2}$ Conn Wagner 121 33x4 SS $2290 \quad 2290$...... 3290 LAMARNE

LAFAYETTE


T $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Conn GdiD 128 32x4 SS $\ldots \ldots$. LIBERTY
 $8.33 \times 5$ Delco Delco $130-33 \times 5$ SS +4500 $4600-4600-6000$ LOCOMOBILE
 LORRAINE
McFARLAN
$127 \quad 6-4 \frac{1}{2} \times 6$ Wsths Wsths 140 35x5 SS $6300+63006300 \quad 7500$ Madiso.
MAIBOHM $\begin{gathered}6-3 \frac{1}{5} x \\ \text { A. Kent Remy } \\ 115 \\ 33 \times 4 \\ \text { SS }\end{gathered}$...... 1550
B $\quad 6-3 \frac{1}{2} \times 4 \frac{1}{4}$ A.Kent Bijur $116 \quad 32 \times 4$ SS $1575 \quad 1575$...... 2395





## BRITISH SPECIFICATIONS AND PRICES.

Prices have romained stable for tho most part with the opening of the new year. Tbis list is compiled as of February 10, from the latest information, and contains a few changes since the January issue. The term chassis when used ircludes complete equipmont less only the coachwork. No uniform equipment is quoted by the various manufacturers. In many instances self-starters are extra. The numerals conneoted by the sign $x$ are cylinder dimensions in centimeters.




## Truck Service in Shanghai Solves Hauling Problem

(Continued from Page 47)

him that the methods you offer is superior to the one he is accustomed to using. This has been the story of the motor truck in England and America and we are finding the same thing applies here. Men who have hauling jobs are morciloss in the evamination of your contentions when you go to them for business, and to convince them that you have something better jou have to show them, not what you think you can do, but what you actually can do, as proven in actual experience.
"Ton for ton and mile for mile, or to express it different. ly, haulage service per ton mile cannot be sold much more cheaply here in Shanghai than wheelbarrow or coolie truck service. The fact that we can compete with the ancient methods at all, from the cost standpoint, speaks volumes for tho modern motor truck.
'Our service, however, can give much more for the same price. We can, of course, give a much quicker ser-vice-so much quicker that there is absolutely no compurison. The difference in time between truck service and wheelbarow service is as grat as the difference between hores drawn wagons and fast railroad trains.
'Even of more importance than the saving of time, however, is the improvement in handing. 'Truck service involves much less handling-or 1 should sily manhand-ling'-of geods, and that, teally, is where our service has tho greatest appeal to the largest number of customers."

## HIS MISTAKE.

It was "fter it "good" lunch that Jhown and Joned were wohbling all over the road in a lwo-scater.
"Jones," said Trown, hy wily of potest. "I do think you're a rotten driver!"
"Why, ole shap," said Jones, in self-justification, "I thonght you were driving!"


Interior view of the

Erussels show

## The Brussels Automobile Show


presented on two cars, ome Duteh and ons Belpian. Tho Dutch maker could mat be expecte. to be gudad ly sentimental reasons, but the betgian explained that Busch cymp.


There was not at geat wealth ef mowely at the Brase sells" show, particularly in view of the fiet that practically
 some neweomers, howewer, sucte as the Metallurgigue, the six cylinder Renault, and the new Ttalian Ahaldo. Theme was also a high chass sporting model exhhited ly the fimmens:

(11) Thie Xeftullurgiquo
 inu, the four uthel bratlias are provided. The steel bumulx which niproute the h, witliese are armangent cortically

Trench ariator, Tiene Fenck, alon at six wlind er Exceltior ond the Beck calr, the latter an entioly new prodiat.

Only the six eplinder model of the hemath has loen changed, diagonally placed cantilever springs being used instead of semiedliptics. The chits of the new -pring- ate enrried in rollers, whereas the old onee were shembed. The bear axle in the now modet is la wed, and the ratiot m. While retaining its old place behind the engine, does not extend
 presed position on ca $h$ side of the ex linders

The Fonde var is a lealutiful nowled denighed ly one of the engineers who wats commeted with the develigiment of the Hi-pana Ifieprano-Suiza motor, which explains the large number of characteristics of that product to be found in

Whais. The car in, in tro models, one of four and the other of cight crlinders. Only the four crlinder model was shodrm, but the engine of the eight was on display. It is understood that the eight crlinder motel has brakes on all wheels. The valus are of the orergend type and the cylinder heads are detachable. The cam shaft is also overhead and the control is by central levers. Springs are of great width and semielliptic is type.

The Beck san also has an engine with crerhead valres and cam shaft, the latter driven from the rear. A unique feature is the engine suspension, which is on coil springs of variable thickness, the idea being to make the engine load adjustable to all sorts of road conditions. The gear box is at the rear and the final drive is by transverse cardan shafts. Altogether this calr is of considerable interest from an cngineering standpoint. The Ansaldo, the Italian entry, is made by $\bar{a}$ firm which started operations during the war, 1.ut discontimed. Jater it was decided to go ahead, and the car shown at Brussells is the result. The company behind this car has, it is understood, financial strength equal to the great Fiat company, which may be taken to mean that there will be some competition between the two Italian companies in the future.

The Insaldo is a medium-sized car designed for popular fitror: Like the troo netr Belgian products it has an engine with overhead valves and cam shaft. Unlike other cars of Italian menufactue the popeller shaft is exposed, and has two universel joints.

Nost of the mochanical novelties were found among the Belgian cans, but there were not enough of these to indicate tendencies. Belgian design parallels closely that of France, and the preference in both countries seems to be for high class, luxury type of cars. In France there seems to be a slight breaking atray from this idea, but the break is not very pronounced as jet. In neither country is there any intention, apparently, of going after the middle class ratronage, which means that the American producer of cheaper cars hes an open field.


## JUST ARRIVED

## Oftudeboher LIGHT SIX

## THE CAR YOU HAVE BEEN WAITING FOR

Exclusive Agents:

# TheSbanghai Horse Bazar\&MotorC0., Ltd. 

Estab. 1851.

SHANGHAI 36 Bubbling Well.

## MAN O' WAR RIDES:IN A PACKARD



Man O' Wiar, greatest of all mere horses, and who is, because of his eaming power, one of the most valuable pieces of property in the world, does some of his traveling at somewhat less than racetrack speed, but in considerably more comfort This is accomplished byeans of a specially constructed box stall momited on a Packind truck chassis. The great racer's traveling box stall is padded, probably with silk, although the gentlen:aly press agent doesn't say so, and has rentilators in the top, and ere rething.

Men O Wiar is owned hy S. I). Riddle of Philadelphia. Last season he cleaned up e'rerpthing on the American and Canadian tracks and for a time there mas talk of shipping him to England for a go at the English thoroughbreds. Mr. Riddle decided, however, that this was not practicable, and sent him to a stud farm in Kentucky instead.

## GASOLINE THIEVES IN TIENTSIN.

Trientsin motorists and gatige owners are baving troable With chauffeurs who canot resist the temptation to equeeze on gasoline purchases. H.S. Oldham, Superintendent of Police, in a recent isisue of the Tientsin Mumicipal crazetie. describes the practices by which car ormere are -windles, the nethork emplereel being ahmort idenijeal with these recently uncorered in Shanghai. As in Shanghai, the thafts were mad possible by collusion between chauffeurs and garage employees, and the denomement followed an attempt by one of the rascals to make it hige clean up all at once. To aacomplish this he adopted the extremely crude method of forging his employer's name to orders for gasolene, thus obtaining more than $\$ 200$ worth in one month. The employer, whose ordinary monthly bill did not exceed $\$ 20$, raised a howl, with the result that a widespread system at thievery was uncovered.

## CHRYSLER IS OPTIMISTIC

## Prophesies 15 Years of Continued Prosperity in Motor Industry

Fifteen ycars at least of continued prosperity for the motor industry, in Detroit and a decidedly probable shortage of good motor cars next spring are predictions of Walter $\mathbf{P}$. (Chr:ler, president of Chrysler Jotor Co., Elizabeth, N. J., and John N. Willy's personal representative in the Willys Corp.

In his Detroit office recently, Mr. Chrysler attributed the period of "dun!ps" through which the antomobile industry has been passing to prodigious production and a paralyzing "sitting habit" acquired during three years of extraordinary motor car demand.
"Detroit has ahead of it at least 15 years of continuing and increasing motor manufacture prosperity," Mr. Chrysler said. "This is as certain as anything in the future can be if manufacturers will curb their appetite for prodigious rroduction and salesmen cure themselves of the deadly sitting habit.
'The fit of dumps through which the industry is passing is due in part at least to indigestion due to over-indulgence. Readjustment and a return of nearly normal conditions is a matter of weeks now rather than months, provided the remedies referred to are applied. The cue for the future in the motor car business should be moderation in everything except hard work.
"Discontinuance of production and delay in resuming it will almost certainly bring about another shortage in good motcr cars next spring. There probably will never again be a slortage in poor motor cars. The demand for good cars already offers relief from the doldrums of the last few weeks. Sales are increasing satisfactorily from day to day.
'Business is not dead-nor even seriously ill. It is merely in need of exercise. And the best exercise I know is to give to the public a good value for its money and work hard to show the public you meanı business. Manufacturers and dealers who haven't forgotten how to sell good merchandise are not worrying about the future. The chair warmers are rapidly going by the boards.
"Make no mistake, the automobile business is alive and strong. I don't belicve in wild optimism which is based on desire rather than on facts, but I haven't any sympathy for the black pessimist who sees only disaster. No catastrophe has happened to deprive people of their purchasing powers or their desires for motor cars. Spinelessness and gloom are, therefcre pure nonesense.

The persimists are the weakings who expect businets to be laid in their hands. The hard workers aren't gloomy. And I honestly hope that we will never again have business conditions which put a premium on incompetence. I am for the real workers and the good cars-and I have unlounced faith in the stable market and solid industry. they are building."


CITROEN ACHIEVEMENT-Two stock cars on Jany. 8 was run from Tientsin to Peking in 5 hours, 35 minutes running time, and used only $3 \frac{1}{2}$ gal. gasoline per car. The return trip next day was made on 3 gal. per car. Recently at Le Mans a Citroen won first prize making 100 km . on 5 Litres.

A new shipment of these economical cars in Touring Models have just arrived. All models are fully equipped, including Electric Starting and Lighting.

## DE DION BOUTON 4-Cyl. 10 H.P. Chassis, the first to arrive in China, is now in Stock.

We are also showing a magnificent-TALBOT-DARRACQ 14 H.P. CHASNIN.

New MATHIS, 8-10 H.P. Chassis

VELIE 6-cylinder Touring
RENAULT 3-TON Trucks
Also full lime KISEBL Cars, F-Pass. Touring, L-Pass, Sport and Roadsters.
MICHELIN TIRES in Cords and Fabrics-Straight Side and Clincher Types.

For further particulars apply to Mr. Philippe Osterberger

## GRAND GARAGE FRANCAIS

## The Famine Spurs Road Construction <br> "(intlinuld ir..." l'u.! I"."






 disien. Ifere "parsoil" is left leehmed, and the bod praces

 of that did. heme, it is feamed, deromed $f$ ant

The Ministry is utilizing famine refugee labor, paying



 said to be eaming sixty to seventy cents per dey per man. These gangs are grouped into sections of four hundred to



Wably of the twemt-ninc faminc-aff etel :ountiee of We-tem shantung is leviod man for reflese worknell in Jerpertion to the esting med mumber of destitut: it contains. These levies vay from sixty to seven-hundred
 ita refonmatory and werk-lowse, when aftemond fled, to the great displeasure of the Ministry. Each county magistrete advances twemt cont: for tratel exprome and two doll ? We left with the femily of emb texpuit, the latter sum leeing
 are collected in a temple which has been commandeered for a recruiting station in Tsinan, and sbipped to Weihsien on the Japanese managed Shantung Railway in lots of sixty, hy aths attached in the regular tratis. Forejghtrained doctors conduct plysical exmminations at the Teinan recruiting depot. Eighteen counties have already sent in their continsent: totaling 2., (ni) men, and eleven others are expected to send 1 astir more.

Lide from the contructie-n work: alre: ly determined upon which are described above, numerons road prejects are proposed. A delegation of gentry are now in Peking seeking
:A Hencmbent concersion to build, with refugee labor, a 13ntor-transpant route connecting Mamutsi, an important moll in western Honan, with Tsining, Shantung, the terminal of a baanch of the Tientsinphhow lime. such a road would form another connection b,lwen Honan and the Tientsin-Pukow railway, and a metm-line "I on it would be an important goods traffic feerice for the railway. One of the most interesting projects आow mad I ("mbemplation is the plan of Governor Yen HsiAnati. if shansi, to complete the construction of his Shansi High川al cutting through the center of the province from nowh to south ind connecting three railway terminals. Many streches of this highway, built in the most modern :llue, have aheady heen completed by the enterprising governor, who now proposes, through the aid of famine labor and for:ign engincers, to conncet up these stretches into China's first great provincial highway. The Shansi govern(1): wad would le of a higher type than the other roads being luilt or projected. Nothing but the best suits Governor Ien, and he plans a well-finished macadem surface for lis highway. Such is highway would develop, almost i.jstantaneously, a tremendous motor traffic, both in gyous and passengers.

North China's famine roads will become, for the first time, acquainted with the miotor traffic when the three light thucks and two touring cars ordered by the American Perd Crow administration are placed on the new lied Cru-s bad in Telichow. Two of these cars are comain foom Sileria, after having done yeoman service for the Rea Cross Howe, and the ronalider are being purchased iii Liont:ins. Iliey will will supercede the present wheelbarrow tran port. While engaged in road construction work, they will give the merchants of those interior districts eyewitness demonstrations of modern methods of transport, lessons which will be quickly learned, to the advantage of the motor indurit! in Morth China.

Many difficulties, political and coonomic, are tying up immediate rail-trensport development in China. The famine roads of North China axe already beginning to turn the, minds of those progressive merchants who are struggling with the transport problem to motor, as a subsitute for steam transport. Nowhere in the world are conditions so favmal le to the develcl ment, on a large scale, or motor traffic. The metor dcalers of Tientsin, who have found, thns far, no market for the motor-truck in North China, 1mar, at no distant tims, find that it constitutes the most important product of their sales.

## THEY CLOSE 'EM ON SUNDAYS

The police department has received instructions to see that all notor car :illes recmes in Columbus, Ohio, are keirt dracd on sundits, in accordance with the city crdinance. It is claimed tlat the ordinance has been violated in a number of instances. Repair shops and public garages are permitted to be open on Sundays according to the ordinance.


She: "If you'd taken the car to Ryton when I told you to we wouldn't have been stuck here like this"

## The Auto Palace Co.

## (British)

## PRACTICAL MOTOR ENGINEERS <br> Telephone West 465 <br> SHANGHAI <br> 362 Avenue Joffre

There is no other business where a life-long experience is so essential as the overhauling and repairing of automobiles and internal combustion engines. Every motorist should make a point of satisfying himself that the people with whom he contemplates entrusting his car are--

## EXPERTS

We are British Experts with a life-long Home experience-Garage as well as Manufacturers. All our work is estimated on before a start is made. All work under the constant supervision and help of an English qualified Mechanic-and Ignition and Carburation work executed by him personally. Cars renovated and painted with English Paints and Varnishes.

[^65]Telephone West 465

# ENGINEERS FORECAST IMPROVEMENTS IN DESIGN 

Better Bodies and Greater Fuel Economy Get Most Attention

Xew interets on the embineering side of the amtoncotive induatry were repreanted at the ammal winter met thes program of the Society of Automotive Engineers. In professional, business and social sessions which covered three days the cmincers activites were presed so tull of interest that the dexice of ruming parallel proferional semanis was resorted to.
()f prime interest from a profesional standroint. however, the varied list of papers and sessions was pointed up: this year by the addition of complete programs deroted to body design and to the consideration of highway building problems.

There were three simultaneons meetings on Wednesday afternoon: The Body Session, W. G. Wall, chairman ; the Commercial Aviation Session, Glenn L. Martin, chairman; and the Chassis Session, H. M. Crane, chairman.

The first paper of particular interest to the trade was presented by George J. Mercer, consulting body engineer of the Saxon Motor Co. One of his first statements was that the body types which will prevail during the coming year will be confined to the five-passenger touring car, twopassenger roadster, five-passenger sedan and four-passenger coupe.

According to Mercer, the five-passenger sedan with four doors has been improved for small cars and for mantfacture by the substitution of a straight instead of a slanting front. He said, "The four-door sedan as we have it to-day comes nearer to meeting the universal approval than any body design that has ever been introduced. It has superseded all other forms of closed bodies for general use, except the coupe, which finds favor because it is a miniature of the four-door sedan.
"In body construction," said Mercer, "the soft roof is used extensively. This roof is formed of water proof material drawn orer padded wooden slats, and has heen one means of keepng costs down during a period of high prices

In the discussion which followed other body makers were in accord with Mercer on this point and all speakers agreed that the ply wood top was not satisfactory because it was so difficult to finish it in the same manner as sheet metal of which the rest of the body was made.

Some of the other features which Mercer pointed out were: The general adoption of inside and outside door handles, the use of top rest irons that are casily taken off when not needed, a superior quality of springs in the seat chehons: higher hoods and radiators, which by their comparison help to make the body look lower. Also there seems to be a general tendence to use cowl lamp and the wee of a sun visor although this has not been as prominent as promised. The greater durability of enamel as compared with painted
surfaces is one of the urges towards all-metal bodies, but changes in design and initial high cost will cause the manufacture of wood frames, aluminium and steel panels, to continue the same for some time.

The chief point brought out in the discussion was that in the past the body engineer had not obtained the proper cooperation from the chassis engineer. F. E. Moskovics of the Narmon company pointed out the result of obtaining the closest cooperation between the chassis engineer and the boyd designer. Another point brought up was the difficulty of using ply wood for tops and the soft top or the all metal top were advocated. Providing a school for body designers was suggested by a number of the designers present. The necessity of a Body Standards Committee was brought up in a few remarks made by David Beecroft, the incoming president of the S. A. E., and was warmly endorsed.

A strong plea for the concrete slab highway was made at the Highway Session of the meeting on Wednesday by TMm. E. Williams. He said: "A concrete slab road, about eight inches thick and of uniform depth across the road, is the type of highway that should unquestionably be built in this country

The crushing hearing value of the concrete at 3,000 pounds per square inch is able to carry the load, but the bearing value of many subsoils is not.
"Many remedies have been offered for correcting road failures. One of them is that on clay or alluvial-soil subbases there should be placed a cushion three or four inches thick, of porous material such as sand or cinders that will permit the subbase to drain out and remain in a more uniform condition under varying weather conditions.
'In my opinion," said Mr. Wliliams, "the automobile vehicle world will profit by laws that will prohibit anything above a 5 ton load and force trailers to take care of the heavyweight loads. The maximum tire load is the factor to be considered and not the weight per inch of tire. It is the beam strength of the concrete slab that counts; in other words, the amount of the load per square foot area on the sub-base which the slab must distribute, is therefore what we have to look after."

The Fuel Section program of the Society of Automotive Engineers was opened Thursday morning by C. E, Kettering with J. G. Vincent presiding in the chair.

At the same time that Kettering explained to engineers some of the old theories of thermodynamics in a new way he also pointed out some of the essentials that make for better car operation. These were a better understanding of the chemistry of the fuel and its combustion and the better distribution of that fuel to the cylinders. To illustrate he
(Continued on Page 82)

## FOR

## ACCESSORIES

HIRE-CARS


Phones: Central 3809 and Central 6006 9. Hongkong Road Shanghai, China

## INSTANT STARTING

 IN COLD WEATHERNew Electrical "Petrolizer" Is Introduced in America

Sectional view and installation plan of Petrolizer


Instant starting of a cold engine is accomplished by a new electrical apparatus known as the $B \& L$ Hot Gas Petrolizer recently introduced in America, which permits of the injection into the intake manifold of hot gasoline vapor so finely divided as to give initial firing on a half turn of the engine on the coldest day. The Petrolizer unit itself consists of an asbestos-lined brass casing threaded into the intake manifold; within this casing is a coil of $\frac{1}{8}$-inch copper tubing surrounded by a sheet of copper, then a sheet of mica and around the latter a resistance coil wound with asbestos cord. The copper tubing is continued out of the Petrolizer unit to an injector on the dash, the injector also being connected with the gasoline line.

The resistance coil is connected with a switch and a
signal lamp on the dash and indirectly with the storage battery so that when the switch is closed current flows through the resistance coil. The heat generated in ten to twenty seconds is sufficient to raise the temperature of gasoline in the copper fuel coil to 600 degrees, so that with a stroke or two of the injector hot gas vapor is forced directly into the intake manifold.

Only a small amount of current is needed because the time taken to produce results is so very short. A most important feature is that engine suction is not needed to get the hot gas into the manifold. It is forced there to within an inch or so of the nearest combustion chamber. The complete apparatus sells in America for $\$ 19.50$ and may be installed by anyone.

## NEW YORK SHOW BOOSTS SALES

## Dealers Report "Phenomenal" Results From Annual Exhibition

Retail sales in as great a volume as have been made at any New York show except that of 1919 are recorded as the week ends. The 1919 show, staged by the New York dealers and presenting automobiles publicly for the first time after the armiztice, was phenomenal as a selling agency. But sales this year are fully up to those of the 1920 exposition in practically all lines of cars. Attendance was 10 per cent ahead of last jear. Some remarkable prospect lists have been made up.

Attendance of dealers, particularly from the Eastern territory, is better than the average at a New York show. Dealers appear to have come in for two purposes, to feel the buying pulse and to abtain merchandising ideas. The crowds and the buying at the show have induced placing of ordere for resumption of shipments of cars under allotments, not in many cases up to 100 per cent but in sufficient degree to encourage many manufacturers to proceed in anticipation of a good spring business.

A meeting of the Eastern Automotive Equipment Association early in the week and patronage of the equipment exhibits at the Palace reveals a gradual, yet steady, return of buying in this field.

## FORD BONUSES TOTAL TEN MILLION

## Employees Get Share of Profis of Their Labor

Bonus payments were made to Ford employees in December in excess of $\$ 10,000,000$, it was declared by C. A. Brownell, publicity director. This is the company's aniswer to a statement emanating from Chicago which said the bonus would be eliminated.

It was declared further that Ford investment certificates, issued to employees last year, will carry an additional 3 percent interest for the last six months of 1920 , making a total of 14 percent interest for the year. The factory is working on a five-day week basis and during the last two weeks production has ranged from 4,000 to 4,390

French attempts to copy American automobiles have not been viry successful. Berliet made a machine closely resembling the Dodge and Renault designed one which includes many features of the Ford. Both these types now are recognized as unsatisfactory. Berliet has produced a 16 hp . car which is being offered in preference to the copy of the Dodge, and Renault has put out a $12 \mathrm{~h} . \mathrm{p}$. car to take the place of the one built along Ford lines.


> If You Are Buying Or Selling it will pay you to see us first

THE FOLLOWING CARS ARE IN STOCK \& READY FOR THE ROAD

| CHANDLER | RENAULT | ROAMER | BUICK |
| :--- | :--- | :--- | :--- |
| COLUMBIA | PACKARD | HAYNES | COLE |
| CROSSLEY | MITCHELL | DELAGE | KING |
| CADILLAC | MARMOM | DODGE | FIAT |

WILLYS-KNIGHT STUDEBAKER HUPMOBILE PAIGE

We offer you every facility for a thorough examination of any car. We will also give you A TRIAL RUN IN THE CAR OF YOUR CHOICE-and immediate delivery, with a year's guarantee.

If you want to exchange your present car for a different make or model, we will trade with you on a fair and square basis

## THE AUTO CASTLE SHANGHAI

Phone C. 402
228 Ave. Joffre

# POST WAR SLUMP SHOWS NEED OF NEW SELLING METHODS 

Manufacturers and Dealers Realize Need of Better Directed Effort

Manulathere whe have alwats adhered to the pheasant and profitable custom of doing what the other fellow did are bewimman to shape their connses on independent lines. Designe that have been molded so largely by the builders of parts and -uppliers of components, are cesponding more and more to the individual touch. Selling plans which have been evolved in parallel, are now beginning to diverge. Theories that will fit one business no longer are found to fit them all. The need of change is growing more apparent.

At the same time the many problems that confront the industry are not all easy of solution. The proncipal units are proceeding cautiously through the fog, casting the lead at intervals and somading prescribed wamings. The risk of losing steerage way, however, may not be properly appreciated.

The mime thought of the moment seemingly is to conserve cash, but it is an open question whether the impulse to economy is not being given way to unduly. This applies 1:aticularly to the outward manifestations of the business.

On the customary basis of accounting, that sales effort is wasted that does not produce measureable returns. Comnon sense seems to prove this. But what of the remote and intangible effect on future business that is lost when all effort to sell is abandoned?

Those dealers who have kept right on plugging, even when it was almost impossible to make sales, feel that the full reward for their arduous toil will come in the relatively quick return to normal when the market reopens. Where they have not even lined up prospective buyers, they have at least established an acquaintance, a basis of future meetingre, and a feeling of renpect in the minds of those with whom they hope to do business bye and bye. In the meantime other dealers have practically sunk to oblivion.

And maty mot much the same be said of adrertising? The manufacturer who himself has donned the cloak of silence can hardly expect more of his dealers, it would seem. Always they have been trained, rightly or wrongly, to believe that a substantial share of their custom has been derived from the national influence of the manufacturer's campaigns. When, therefore, the manufacturer withdraws his support as suddenly it lee lats, in some instances, is it zeasonahle to expeed move of the dealer?" "()ut of sight, out of mind." in so uften the way of the world, that the question presents itself broadly how much it will cost to restore the prestige that is thus being lightly laid aside.

And here a word to advertising agencies may not be amis. Instead of an attithde reeming to imply the thought, "How much can I get to spend," the more effective plea will he. "How little can he maed to secture the maximum retultas:" Permanent relationshing with chents will he
built on service that suffices, rather than service that is mere display.

Advertising, however, is at best but the outward dress of the business. Many a product has been lifted out of the depths of obscurity and raised to the eminence of success through its instrumentality, while many another, possibly no less worthy, has remained undeveloped, and ultimately l.e come submerged, through inattention to the principle that constant familiarity is the basis of selective demand. To turn the old phrase around, the lapse of advertising entails the risk of being forgotten but not quite gone. That would be a deplorable state indeed.

It is one thing to reduce the activity of a business to profitable levels, but quite another to destroy its balance. The prudent designer never thinks of turning out a chassis without giving thought to equalization of the brakes, but it is rather more than an open question whether the manufacturer who suddenly silences his selling effort, it matters not whether in one direction or all, is not sliding one wheel and letting the other run free.

The real question at issne is the question of good will. Public appreciation of a product and that for which it stands, can hardly be turned on and off instaneously, like a stopcock. Forces beyond control may have checked buying, but they have not checked demand, and thereby has aris-n a great misunderstanding, leading, it is feared, to costly error in many instances. For if the people want to buy, but hesitate and are not urged, the door of opportunity is closed.

## IT PAYS TO KEEP ON ADVERTISING

In advertising, as in finance, there is an occasional Ponzi.

In a popular play of a few years ago- "It Pays to Advertise," the joung and exuberant hero marketed a soap-"13-unlucky for dirt," with overwheiming success.

The soap cost 3 cents, and after the second act, sold for \$1.00 in tremendous quantities.

This dramatic profit came, of course, from a whirlwind campaign of publicity, and so the thesis that it pays to advertise was proved and everybody lived happily forever after.

People like to dream of striking be popular chord one terrific wallop and cashing in millions, but it isn't being done.

The public is lethargic, stupid, forgetful, and advertising success must be planned in terms of years of time and the continued, 1 ersistent, never-ending application of power.

# Storage Battery 



## Your Share of the Prest-O-Lite Factory

WHEN you hand over your check for a new Prest-O-Lite Battery you get more than a storage battery. Your money buys a first mortgage on the Prest-O-Lite good name and all it represents-the great Prest-O-Lite Factories-the knowledge and experience of Prest-O-Lite Engineers-the

Permanent Force of Service Experts-absolute assurance of a dependable starting-andlighting service.
Yourinterest in the Prest-O-Lite Factory, like the factory's interest in you, begins-not ends. We stand ready to relieve you of all your battery care and attention.

## A Complete Range of Sizes Now in Stock at the Shanghai Factory Branch



Branches and Agancies in all Important Cities of China and Abroad Exclusive Agents in China for


## ADJUSTMENTS VERY IMPORTANT

Customers Have Way of Judging Cars by Little 'Things

At a time like the present it would appear extraardinarily foolish for manufacturers to deliver cars in an unfinished state as regards the adjustment of various mechanical parts. Yet several cases have recently been brought to notice, of cars being turned over to their purchasers in what can only be described as a deplorable condition as regards the tuning of their carburetors, adjustment of brakes, - and so forth. The cars were not of long-standing repute, which fact makes it all the more remarkable, for one would almost naturally be of the opinion that a concern which has still to make for itself a name with the greater section of the motoring public-and such can only be done by the satisfactory performance of models in the hands of private customers-would spare no pains to see that their cars were turned out with the comparatively minor, although high important, adjustments properly carried out.

The private motorist, in many cases, fails to differentiate between the causes of poor running-whether they be the result of a low-grade engine or merely too small a jet. We would, therefore, draw the attention of those manufacturers who have their foot on the bottom rung of the ladder of fame to this particular question of final testing, for no matter what care may be taken in design and manufacture, it is the finishing touches, conscientiously made, that determine the ultimate degree of the purchaser's satisfaction.

# SIGNS OF RETURNING PROSPERITY 

Only Relative Values, Fermanently Fixed, Will Solve Whole Problem

liundamental conditions are sound and the country is moving to a safe and stable basis, says the Boston News Bureav. They never will be truly sound till relative values are permanently stabilized.

Horeign exchange is practically stationary. Better tharı dropping, for all concerned.

A Bradstreet's survey, based on sensitive commodities an. 1 believed somewhat in advance of the general fact, shows prices dropped 35 per cent between February 1 and December 1, 1920. Perhaps the actual drop was 25 per cent. wholesale, and since December 1 considerably more.

On December 1 the nation had $\$ 8,281,659,486$ money on rand, compared with $\$ 7,783,144,476$ a year previous. Per capita, $\$ 59.41$, compared with $\$ 59.48$ a month earlier and \$5゙5.65 on December 1, 1919.

Partly conservation, partly trouble: Dividend and interest payments, nationally, for December were estimated at $\$ 327,000,000, \$ 700,000,000$ less than in December, 1919, when the income tax caused many stock dividends.

Class 1 railroads received $\$ 29,343,000$ less than was expected under the new rates, in September. Maybe the little old motor truck was partly to blame.

Reports of the Car Service Division at Washington now show a surplus of freight cars, and an opportunity for roads to get many of their wandering cars back.


$I^{T}$T is the carbon that steals the power of your engine - causes that knock-and retards hill climbing. Cleanliness is the secret of a powerful motor that will take hills and pull through mud and sand on high.
Johnson's Carbon Remover is the easiest, cleanest, safest and most satisfactory remedy for carion. It will save you $\$ 3.00$ to $\$ 5.00$ over other methods and without laying up your car. Johnson's Carbon Remover, used every 500 miles, will prevent the accumulation of carbon and keep your motor snappy and full of 'pep'. You can do it yourself in ten minutes-without even soiling your hands-and the cost is trifling.

## Johnson's Car Savers Keep Your Car Young

If you run your car without any attention you will sell at a big loss. But with a little time, care and Johnson's Car Savers you can cut the depreciation in half. There's a Johnson Car Saver for every purpose-no experience is required for their use-and they can all be applied by the average motorist with perfect results.

Johnson's Radiator Cement-seals leaks in two to ten minutes.
Johnson's Black-Lac-a permanent and waterproof top dressing.
Johnson's Auto-Lak-a quick drying, one coat body varnish.
Johnson's Cleaner-will remove scum, grease and road-oil.
Johnson's Prepared Wax-for polishing body, hood and fenders.
Johnson's Stop-Squeak Oil-stops squeaks in springs, shackle bolts, etc.
Insist upon your dealer supplying you with JOHNSON'S CAR SAVERS. Don't stock or use unknown substitutes. Write for our folder on Keeping Cars Young-it's free.
S. G. JOHNSON \& SON, Racine, Wisconsin, U. S. A.

## HUDFORD GARAGE

(DODGE \& SEYMOUR (China) Ltd.)
Agents for China
89-91 Rue Montauban, Shanghai.

## TRUCK SERVICE SUPPLANTS RAILROADS IN POPULAR FAVOR

Enterprising Ohio Firm Wins Patronage Through Better, Quicker Service



 rears between Cincinnati and Dayton, Chio, a distance of i: mila.

With this motor express they have been able to approximate railway express service with motor trucks and give 10 it the adrantigere of -peed and saphed delivers al levuinal points which are so often lacking in rail tramsportation. Every step in the collection, transportation and delivery of the groods hamded hy this line wroks on a achedule that does rot vary even by minutes, and every facility has been arranged to maintain a regularity of schedule under all conditions.

The procedure at each terminal is to collect the freight with separate trucks at the warehouse and then reload it for he inter-city rim.

The same system prevails at the intermediate slops along the way. In these smaller tomns and villages, the terminal has been located with some enterprising merchant who is paid for his work on a basis of the amount of goods handled, and who in some cases offere delivery and collection facilities, and in some others makes it incumbent on the shipper and consignee to deliver and care for their own goods.

The trucks leave Cincinnati at an early hour in the rorning. They are loaded at the terminal warehouse late in the afternoon of the preceding day and the load is carefully planned in conjunction with the route sheet so that no waste time is run up in unloading at the way-stops. After being loaded the trucks are sent to the garage and jacked up
to take the load off the springs. They also are gone over and given fuel, oil and water. When the start is made in the morning there is nothing for the driver and his helper to do but crank up and get under way. The trucks arrive in Dayton about noon and return as soon as they have unloaded and taken on a new load.

At present the C. and D. Motor Delivery Company is usmatine four G. II. ('. truck of tro-ton capacity. Thers plan to add a five-ton G. M. C.

There are no restrictions as to character of load, except for safety. While a larger number of heavy and bulk loads have been carried over the route, much of the business has been in package goods.

Package goods on all trips is ensured against fire and collision under a blanket policy. It has not been found necessary to ensure against theft. The policy is based on an average value for all loads up to one cwt., this being the average weight of each individual consignment. The rate of compensation for losses is 50 cents a pound. In this way it is not necessary to write a special policy for each load and the law of average will tend to protect the carrier fully over a period of years.

The inter-city delivery business has been very profitable to the C. and D. Company. In arranging the schedule of prices per hundredweight, the Company based their calculations on their costs and while the rates were a trifle in excess of those charged by railways, the difference in price has never been a serious handicap as the promptness of the deliveries and the additional facilities for handling shipments more than make up for the slight variation.

## SOME AUSTIN FIGUES FOR THE YEAR

In spite of the serious setbacks caused by trade disputes m 1920, notably the moulders' and miners' strikes, the year has been a good one for British motor car production.

A considerable percentage of the total production is to be credited to the efforts of the Austin Motor Co., Ltd., who have just completed a very successful year, showing a sales thenuser of close up on és, (100), (N10.

This is by far the biggest outpur attained by any automobile firm in the British Isles for this or any preceding year in motor annals.
 tracts with distributors having been made for Austin cars
 within the year.

## ROLLS ROYCE PLANT BUSY

The American works of the Rolls-Rorce compant has reopened on a full production schedule. About 600 workers are employed and more will be added.

## UNIFORM GARAGE CHARGES IN PARIS

A uniform rate for garage charges has been established at Paris, according to the American Chamber of Commerce in Paris, which states that the arrangement was made by the Chambre Syndicale du Commerce Automobile and "the garage proprietors. Cars laving a length of $3 \frac{1}{2}$ meters will be cared for on a basis of 150 francs monthly; up to 5 meters the charge will be 210 francs and above that the rate will be agreed upon. The daily rate for cars with a maximum length of 5 meters is 10 francs. Clients are informed that "in order to take advantage of these prices they must buy their supplies, such as gasoline, oil and tires, from the garage."

The correct mixture at high engine speed is determined Iy fla-ling the throttle open to note if engine picks up smoothly and evenly. If it back-fires it is getting too much air mid the high sneed adjustment must be changed to gire it less.


Exclusive Agents for GARFORD and FEDERAL Trucks Chassis in stock in any capacity

WE CAN ALSO SUPPLY YOUR TRUCK BODIES As we Own and Operate the largest Motor Truck Fleet in China it follows that our Body Building Facilities are the best.

## THE CHINA GARAGE COMPANY

WE WILL BE PLEASED TO MAKE A DEMONSTRATION
21'Foochow Road
SHANGHAI
Phone C. 2403

## FEDERAL

3 $1 / 2$ TON
TRUCK


## A SHANGHAI BODY MAKES THIS RENAULT A HANDSOME CAR



A Renault 11.9 chassis with specially built shanghai body. Chassis imyorted by the Auto Palace Co. Body bill ly the E'ustern Ciurige

## BUICK CITED FOR SERVICE

Japanese Army Finds Them Satisfactory for Siberian Expediticn
During the World Wiar, while attention was focused on the great struggle that was going on in western Europe, a part of the campaign was being carried on liy the Japanese army in nonthem Manchuria and Sileria. Much of the territory in which fighting was going on was far from the nearest railroad, and the transportation problem was one of the greatest importance. Supplies of all descriptions must be delivered to the fighting forces without delay or serious interruption. Officials must be carried to and fro. Wounded must be taken to the rear.

The Japanese authorities solved the problem in this ease by organizing a motor transport service. They chose the Buick-encouraged, perhaps, by the performance of a fleet of these cars in the Gobi desert, in Mongolia, a conquest of "impossible" conditions that has become world-famous. That their confidence was not misplaced is shown by the fact that the Japanese distributor has received from two different branches of the service citations of the cars used. The first citation translated reads :
"We hereby certify that the Buick cars were in service of the First Automobile Corps during their campaign in the northern Manchuria and Siberia, and which started for the front on the September, 1918. The cars Buick proved their superiority, their dependable efficiency and the facility of their control and driving, despite the hilly and shaggy roads in the territories where they were driven, withstanding hard usage even in the depth of winter with the temperature 50 degrees FR . below zero. They have not encountered with any defects in their mechanism, and the fuel consumption was far smaller than the others." The First Automobile Corps.

## NEW PIPE LINE IN FRANCE

For the purpose of delivering petroleum from Havre to Paris, a pipe line 126 miles long is being constructed for the Compagnie Francaise de Transport des Mazouts et Petroles. Except for one-tenth of the distance the line will follow the Route National from Havre to Paris. The pipe, which is to be 10 in . in diameter, is to be laid along the edge of the road 3 ft . below the surface. At Havre and Paris there will be ten tanks of a capacity of 55,000 barrels each, and six tanks of a similar capacity will be stationed along the route at the pumping stations. The latter will be provided with apparatus for heating heavy oil so that it may flow easily.

An interesting point in the plans for construction is that arrangements have been made to utilize trench-digging machines, which were sent to France for the American Army, and were taken over by the Fiench Government when the latter acquired the American Army stores. The pipes, tanke and pumps required for the undertaking are being sent from America.

The second citation is as follows:
"We hereby certify that the motor cars Buick, handled by the Vanase and Company, were in service of the Second Expeditionary Aeronautical Corps, despatched in Siberia, and proved the stability of the mechanical functions, facilities of controling and driving. Even in the season of severe cold in the territories above mentioned, there was no defect found in the mechanism; in short, the superiority of the car was proved to be usually noteworthy." -The Second Expeditionary Aeronautical Force.

This same fleet of cars is being used in the present operations of the Japanese army against the Bolsheviki in Siberia.


9 HONGKONG ROAD, SHANGHAI.

THE ALSACE MAKES ITS APPEARANCE

New Car Promises to

Win Favor in this Market

The new
four cylinder
Alsace


A
 watching with rather intense interest the success that is being achieved abroad by the new American Alsace car, an "assembled" job that is being turned out for export trade.

The Shanghai Motors Corporation, distributors for the car in this territory, have received reports from the factory to the effect that the car has been received with great favor whereever it has been introduced, and that it seems to fill a need that has long existed for such a product.

The Alsace is built especially for export in chassis form only. This permits the purchaser to put on any sort of body that pleases him, and in England, particularly, some fine results have been achieved at remarkably low cost.

Mechanically, the car is in full harmony with the best engineering practice. It is powered with a four cylinder Herchell-Spillman engine, with a Royal Automobile club rating of 16.6 horse power. The usual detachable head is


The engine in the new Alsace is a Herchell-Spillman, four cylinder, very compact and neat. The carburetor has a special hot air attachment and the fan bracket is adjustable
fitted, while internally the substantial crank shaft is balanced, and lubrication is by forced feed and splash. On the
offside of the unit the valve tappets and stems are enclosed: behind easily detachable covers, while the Zenith carburetor bolts directly on to the cylinder block and is provided with a. flexible metallic tubing extension on the main air intake, which is connected to a muff on the exhaust manifold, in-


A neat dashboard is equipped with all necessary instruments
suring a supply of hot air to assist in the vaporization of the fuel immediately the engine has fired.

The fan bracket is adjustable. A two-unit six-volt Dyneto starting and lighting set is fitted, and the capacity of the accumulators- 120 amp . hrs.-is distinctly generous. for a car of this type.

The clutch is very smooth in action, and, what is more remarkable in a unit of this type, frees quickly when disengaged, so that there is no long wait for the clutch shaft to slow down when changing up. As regards the reverse opera-tion-getting into a lower gear-absolutely silent changes can either be made by double-clutching, or for those who do not care for this somewhat complicated operation, a clean change can be made by the more ordinary methods, providing the gear lever is moved fairly slowly.

The footbrake is smooth in action and progressive.
To say that the car is capable of a certain $45 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. is by no means an extravagant claim, and more important is the fact that over $40 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. can be obtained on reasonably steep hills.

There is no secret in the success of the "Karrier"; it is just due to a unique policy in motor vehicle manufacture which never will tolerate the secondrate or next best.

The integrity of "Karrier" construction and design is based on this vehicle's unimpeachable quality. That is why the "Karrier" is known as the more than usual lorry.


A typical 4-ton "KARRIER" Iorry fitted with flat body. Note the commodious, weather-proof cab.
The "KARRIER", is the more than usual lorry. What has made it so? Why the "Karrier'" policy of production, which has ever recognised the fact that the success of the future depends on the success of to-day. That to win success and keep it, you must give something better than the next best. That quality must be the deciding factor in the selection of materials, in machinery, and workshops organisation, in assembling, erecting, testing and finishing, the best in everything must come first.

## Write for Catalogue.

# KARRIER MOTORS, LTD. KARRIER WORKS. 

It is, in point of fact, on hills that the Alsace "Four" is particularly brilliant.


The spare tire is carried at the rear and the gasoline tank has a large filler, with quantity guage

The springs adequately damp out all road shocks, are not prone to periodic movement, and, moreover, keep the wheels always in firm contact with the ground.

The steering is responsive and is apparently comfortals? irreversible. The usual hom button in the center of the wheel, and the ignition and throttle controls neatly mounted therein add to the ease of control, and, of course, right-hand drive is fitted on all Alsace "Four" cars.

## SWEDEN TO CHANGE TAXATION

## May Put Measure on a Purely Horsepower Basis

A proposal to tax automobiles in Sweden has been made by the Swedish Highway Commission, the yearly rate being 50 crowns ( (,$~ \$ 13.40$ at normat exchange) for all cats having a horsepower rating of ten or less, with an added 10 crowns ( $\$ 2.68$ at normal exchange) for each additional horsepower. This propocal wati reported to the burean of Foneign ant
 of Stockholm, under date of ()etober $1!9$.

Not tax, dither gevemmental or monicipal, hat heon im-
 make the propored tax effective. the Highn: 1 - commension
 fore registation, must furnish exact details as to the howsefewer. 'The tax is to be collected by the (imemment amd afterward distributed to the vations districto for mand mathtenamee. It is intended to cower atl cars, whether nsed in the cities or in the coum?

Fiurther peint: which appeal to the driver ate the provision of a spate bim, securely momoded yet cabily detach-
 and easily seen capacity gathos are ineluded in the standard equipment.

## MOTOR CAR

INSURANCE

THE COMPREHENSIVE POLICY
OF THE

## ALLIANCE ASSURANCE

CONPANY, LIMITED
(ASSETS OVER £24,000,000)

Affords FULL COVER to Motorists, INCLUDING-<br>LIABILITY TO THIRD PARTIES.DAMAGE TO, OR LOSS OF, CAR

1. (cluding lamp and accessories) by-

Collision or other Accident, Fire, Lightning, Explosion or Self-Ignition, Robbery or Theft or any attempt Thereat, Malicious and Wilful Acts by any Persons.

## MEDICAL \& SURGICAL EXPENSES

## ADDITIONAL BENEFITS

Can be included in the Policy by Arrangement.

## ABSOLUTE SECURITY

## PROMPT AND LIBERAL SETTLEMENT OF ALL CLAIMS.

AGENTS-
JARDINE, MATHESON \& Co., Lłd.,

## SHANGHAI,

AND AT
TIENTSIN, PEKING, HANKOW, TSINGTAO.

## EMERGENCY BRAKE; ON TRANSMISSION

Change in Practice Generally Apparent in American Design

In the prast when a transmission brake has been used on American cars it has generally been the pedal operated service brake, while the wheel brakes were the rarely used emergency brakes. The chief object in making the transmission brake the service brake obviously was to render brake operation less onerous to the driver, as the transmission brake requires much less effort to apply than does the ordinary rear wheel brake.

Recently, there has been a complete change in this practice, and the transmission brake is now generally made the emergency brake. This change can be justified on several grounds. The emergency brake is undoubtedly the one which should be used for making emergency stops, that is, quick stops required to avoid collisions or other accidents. Now, the transmission brake is always far more powerful than the rear wheel brake and therefore far better adapted for making quick stops.

Under ordinary conditions it is not good for a car to be stopped very quickly, and with the rear wheel brakes, which require much more effort to apply, the careless driver is not so apt to misuse his brakes. Moreover, the transmission mechanism is not subjected to the braking strains when the brakes act directly on the rear wheels. Unnecessary strain on the driving members has been the chief argument against the transmission brake in the past, and if the brake is used only for rare emergency stops the objection loses much of its weight. On the other hand it seems to be the reasonable thing to ordinarily use the mild crake and only in case a quick stop is absolutely necessary to resort to the more powerful one. The wear of tires will certainly be much reduced if this 1 lan is followed, as compared with the case when the transmission brake is constantly used.

Stock rear axles usually carry two sets of brakes, and this tends to prevent the adoption of transmission brakes on new cars. However, where the axles are specially designed for a new job there seems to be a decided tendency to adopt the transmission brake, as this obviates the need for the exposed contracting brake on the rear wheels which is hardly in keeping with the modern practice in motor car engineering of enclosing all working parts so they are fully protected from dust and dirt.

## THE PASSING OF THE HORSE.

York, Pa., has removed all her cast iron drinking fountains, which were set up in various sections of the city by the S.P.C.A. of Pennsylvania. The fountains had fallen into disuse because of the passing of the horse as a means of transportation.


## MOTOR REGISTRATIONS BY LONDON COUNTY COUNCIL.

Interesting figures are provided by the London County Corncil as to the registrations effected and licenses, ete., issued during the quarter ended September 30th. The first column gives the figures for the quarter; the second the total regisered up to September 30th :-

Light motorcars registered
6,663
Heavy motorcars registered
1,125
Motorcycles registered
4, 843

3,515
Motorcars
2,581
Motorcycles
General identification marks issued ... 225
Copics of entries in register furnished 575
Ticenses to drive issued
24,567
Duplicate licenses granted 409

147,617
22,554
86,519

71,784
39,701
-
-
785,706

Acording to oftial figures unemployment anong Paris workers in the antomobile indistry has reachoi between 30 and 40 percent. The unions siyy $8,000 \mathrm{men}$ are ont of a total of 35,000 . The general Metal Thdustry Assocetiation states that 3e pereent of a total of 16,000 employees in the Paris region are now unomployed. The most general unempleymeut is among the pattern makers where it has roached 75 porcent.

## HIGH SCHOOL HAS AUTOMOBILE CLASS

Naturally, it Proves the Most Popular Study of All
Although the course in automobile mechanics in the Sacramento High frchool is the latest addition to the mechanical instruction offered, it is by far the most popular, and every class is filled to capacity. The course provides fon thee years of instruction, cars being used for demonsitrations and repair work, as well an for theoretical training, doniging and body building and repair.

The beys like the work," silys ('. Mr. loumtain, instructor. "When we turn them out they will be real mechanies, and capahle of doing any work in a garage. They won't have to sweep out, run ertands and do odd jobs fore a gear befose the begin to lam hem to work on a car.


The first rears study is an indication of the work done. It includes the stuly, adjustancol, theor? cate and repait of the stcering gear; all types of springs, assembly, straightening, repair and hembers of the lomb ank: asombly, difforential, and bearings of rear axles; relining and adjustment of brakes; come and dise clutehes: phentensive, sedere tive and plametan! fatmomisaions; motorsctaping and adjusting bearings, grimding and adjusting valves, fllting wrist pins, frimming camshalts, adjusting magnetos, ogreation of viling systoms.


The Bean has something of an achievement to its credit, for it provides what very few cars provide, a more or less upright sitting position combined with a sense of being ensconced in the car.--" Country Life," June 5, 1920.

# ANGLO-CHINESE ENGINEERS' ASSOCIATION, LTO. 

Reiss \& Cio., (Reiss Bros. Ltd.)

Tel. C. 1447
SHANGHAI
7 Hankow Road
TIENTSIN ——_-_PEKING

INCREASE IN FOREIGN CAR SALES

## American Foreign Business Shows Remarkable Increase

Both exports and imports of automobiles and acces. sories showed a remarkable increase in the statistics of foreign trade, compiled by the Bureat of Foreign and Domestic Commerce for November. The shipments of American cars for the first eleven months of this year were ralued at $\$ 274,597,092$, as complated witl $\$ 136,141,4 \%$, for the corresponding period last year. These figures show that the foreign trade in automobiles has more than doubled.

Imports, tco, have grown with the passing of the months, indicating the rehabilitation of European car manufacturers. There were 853 automobiles entered at American ports in the eleven months ended November. The declared value was $\$ 925,669$. For the same period in 1919, 107 cars valued at $\$ 100,781$ were placed on American mnrkets. The automobile parts manufactured abroad and sold here increased tremendously for the total value of the shipments for the eleven months of 1919 was $\$ 251,491$, as compared with $\$ 1,136,256$ for the corresponding period this rear. The imports of these products for November, 1919, were valued at $\$ 79,584$, as against $\$ 107,264$ for November, 1920. Nincteen cars, valued at $\$ 58,0$ or 4 , entered this country in Norember last year and sixtj-sis cars, with a ralua-

## NEW SOURCE OF FUEL SUPPLY

Commenting on press reports relative to the production of gas and motor fuel for lighting and power purposes from straw, the British Commercial Counsellor in Washington states that the appaatus for this purpose, which was exhilited at the Chemical Exhibition in New York City in tlie autumn of 1918, is apparently simple and easily manageable, and consists of an oven 4 ft , wide by 10 ft . long and 6 ft . high, a steel retort 18 in . in diameter and 5 ft. !igh, and a steel reservoir 7 ft . high and $f_{5}$ it. in diameter. The pressure on the walls of the retort and the tank is about 35 lb . to the square inch. The aim of the invention is simply to make it possible for the farmer in the graingrowing districts in the West to make on his own farm fuel for runuing his machinery and light for his buildings. It is not expected to compete outside these districts with ordinarily produced fuel.
tion of $\$ 67,272$, were imported for the same month this year.
The 4,917 cars manufactured in this country and returned for various reasons were valued at $\$ 7,855,499$. This eleven months' total is large, for in the same period last year 1,497 cars valued at $\$ 3,199,675$ were returned. Part of this increāse is perhaps due to returned army cars.


## Mollowinn

are not a luxury but a comfort you can well afford.

Their cost of operation is a trifle; they return a wealth of pleasure.

The use of electricity for driving motor cars has brought down the running cost until the high cost of gisoline is no longer a factor in automobiling.


Andersen, Meyer \& Co., Lid. AGENTS IN CHINA.

Canton
Foochow
Hankow
Harbin
Hongkong

Kalgan Mukden<br>Peking<br>Tientsin<br>Tsingtao

Tsinan
Urga
Vladivostok Yunnanfu
 appointment of Charles Sorensen to succeod F. L. Kilingen-









## ELECTRO PLATING Co.

" MERCLIR Y"<br>Electro Plating of all descriptions

## SILVER-NICKEL-COPPER BRONZE-ZINC

Automobile Wheels, Bumpers, Wind-shield Frames, Radiators and other bright parts nickeled and fully guaranteed to withstand the severe China climate.

## ALL WORK DONE BY FOREIGNERS

We also do cleaning and polishing for Technical purposes and articles "de luxe."

Wheels and Rims Galvanized OUTPORT WORK SOLICITED

Office and Works, 24C Yulin Road Yangtszepoo Shanghai Phone E. 183

NORTH BRITISH
AND
MERCANTILE INSURANCE C0. L†d.
MOTOR CAR INSURANCE

MODERATE RATES
AND
COMPREHENSIVE CONDITIONS
INCLUDING
UNLIMITED THIRD PARTY LIABILITY.

MGENTS:-
E. D. SASSOON \& Co., 9 Jinkee Road MANAGER:
E. E. PARSONS, 12 Hankow Road shanghai.

## NAPHTHALINE AS MOTOR FUEL

Dissolved in Benzol it Gives Satisfactory Results
Th a paper ly Is. S. Palmer, presented before the Institution of Automobile Engineers, the advantages of naphthaline dissolved in benzol for use as motor fuel are discussed and conclusions drawn from experimental investigation. The work was based on the suggestion that the heat content of the usual oil fuel could be increased by dissolving acetylene gas in it. The coefficient of absorption of acetylene gas being known, this enrichment can be easily calculated. With commercial benzol the gain in heat content figures out to only 0.02 per cent and the scheme is therefore of no interest. With gasoline the gain is still less.

These figures made it apparent that in order to get a solution with an increase of any practical value a greater weight of solution with high heat content must be used. Experiments were therefore carried out with naphthaline solutions in benzol with the object of obtaining an efficient cheap fuel of high calorific value and of investigating the possibility of the efficient combustion of solid fuels by means of solution. The experimental work was carried out by means of a Douglas $2 \frac{3}{4}$ h.p. motorcycle engine. The following conclusions were reached:
(1) Narthaline dissolved in benzol to a strength of 15 per cent by weight forms an efficient fuel for ordinary gasoline motors, and thongh about 6 cents per gallon cheaper yields 3.4 per cent more mileage than commercial benzol.
(2) A solution, rather than a mechanical mixture, forms an efficient method by which solid or heavy liquid fuels can be conveniently burnt in ordinary internal combustion engines.

## TRANSMISSION GEARS SLIP OUT OF MESH.

The slipping of transmission gears out of mesh is something that nearly every owner has to experience sooner or later. There are several causes. The locking mechanism which holds the sliding gear in mesh with its mate on the countershaft mry be worm or broken or out of adjustment. Tsually the locking mechanism consists of notching the shifter rod at just the right place and forcing a ball into it by means of a spring. Thus, in a three-speed gearbox, both shifter rods would have three notches. One rod would have them for high, neutral and second, and the other for low, reverse and neutral.

Sornetimes the springs pressing the balls become weak or break, or the plug nut retaining the spring becomes lost or the edges of the notch become rounded off. Any of these defects interferes with perfect alignment of the gears and thus produces the tendency to throw them out of mesh. In fact, any trouble of this sort may usually be traced to improper meshing. Shifting forks out of adjustment, play in the shifting mechanism, worn gear teeth or worn or sprung shafts may canse this trouble. Worn teeth is the most freṇuont cause of slipping out of high.


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## NEW BOOK TELLS HOW TO REPAIR FORDS

The Ford automokile is in such universal use and there are so many of them to be found that the business of repairing them assumes gigantic proportions. J. Howard Pile, in his recently issued book, "Modern Methods of Ford Repairing" (U. P. C. Book Co., New York), describes methods and tools which will facilitate the standard repairs. Competition is so keen and the margin of profit so small that the work must be done efficiently or the profits will turn to losses.

In the compilation of this service manual, the author has studied factory and shop methods from many angles, and the reader is given the benefit of observations covering many of the most profitable and efficient Fond service stations in the country. This material was first published in a serial in "Motor World," but it has been rovised and brought up to date and there is considenable material in the book that did not apear in serval, such as wiring diagrams of all the starting and lighting sestoms that were put on the Ford car before the Pat starting and lighting system became standard equipment.

The sizo of the book is silleh that it can bx camien in the procket, the pagos being $6{ }_{2}^{1} \times 1 /$. Bewide the fwent:four wiring diagrams, thero are 135 illustrations of special tools, equipment and devices and the pages rim to 2ill, including a complete index of all operations and subjeets.

## FORD MAY OFFER STOCK TO PUBLIC

Financial circles in New York have been deeply interested in circumstantial reports that Henry Ford proposes to offer to the public in the near future an insuc of $\$ 100,000,000$ participating 8 per cont preferred stock of the Ford Notor Co. The steck would participate in the camings of the comprany up to 12 per cent, it is stated. hut would have no voting power.

Ford does not intend to offer any part of the stock to the banks, it is said, but intends to sell all of it to the pablie. He is reyorted to be confident that he would have no difticulty in dipposing of it to the public and that the offering would be over-subscribed quickly.

Athongh official confimation of the repont is lackinge, bankers here are inclined to believe it is trne.


## caurtion

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The "YANGT'SZE" Policy offers the fullest possible protection and is the most generons to the car owner.

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(Shanghai Central 5475)
and ask for a prospectus.

## THE PREMIER SILK EMPORIUM IN CHINA

##  DEALERS IN SILLSS, SATINS, CRPPES, POIGGES, EMBBRODERY and GHUZES

OF ALL KINDS. sPECIALITIES.

## How China can get Goods Roads <br> ('onlimues from paye 13)

considered a sont of luxury in riost American lomes, to ke su:ved onis when thare Was "company," or at holiday. finst: A few years ago, however, the orane growers, in-- 1ead of contiming their old individualistic methods, "got tye :lier." They advertised it eil product and :chicutively empharized the value of oranges as food. Result, a ten fold increaso in lee consumption of oranges, with it han fold monew in erofits for each of the growers who joined in the organized effort. The oranges don't taste any better now than they did twenty !ears ago, but everybody eats them now, whereas in the old days about the only time some of us ever salw an orunge except in a fruit store window was when Santa Claus left one in our C'hristmas stocking.

Organized effort cannot come, however, until thero is education, and the reason the Chinese are "different," is not becanse they diverge fundamentally from other people, lut because they have not been cducated to the value of organized effort.

To make them see the value of good roads, therefore, requires education, and the best way to impart this education is through the sale of motor vehicles, because the motor vehicle is in itself educational. The mere possession of an automobile causes the owner thereof to take a larger view, and to see what a good thing it would be, not only for him, as an individual, but for the whole community in which he lives, if roads were built.

Suppose, for the sake of argument, that by some magical means an automobile could be sold, today, to every Chinese who is wealthy enough to own and operate one, and that these automobiles could be delivered, all ready for use, to these Chinese owners.

If this could be done, today, dces anybody doubt that by tomorrow night there would be a tremendous and overwhelming good roads movement in China? Doos anybody doubt that this large army of car owners would soon "start something'" in the way of good roads?

If there are such doubts they cxist in the heads of people who do not understand human nature or human psychology. An automobile presents an irrosistable invitation to usage, and that invitation is just as potent to a Chinese as to a man or woman of any other nationality. There were croakers who scoced at the idea that famers in America Would ever use automoliles-the farmers who through generation after generation had known no transportation except the kind supplied by horses. Thie samo croakers pointed to the dirt roads in the farming districts-roads which were just as little adapted to automobiles as the wheelbarrow paths of China-and hooted at the idea that those tight fisted farmers would ever become so infected with the automobile but that they would pay out good money for "paved streets in the country," and yet that impossibility came to pass, and is being more and more realized every day, as witness the fact that farmers in some states own

DOES MOTOR PUSH OR PULL THE CAR

## Interesting Discussion Brought Out by this "Simple" Question

Discussing with some car owners recently some of those curious and oft-times quaint questions, which, asked on the spur of the moment, are by no means so easy to answer correctly as would appear, one question was: Does the engine pull the car or push it? One member of the party brought forward the commonplace simile of the man with the wheelbarrow. He observed, "If he is in front he pulls the barrow, and if behind he pushes it. Therefore, as the engine of a car is in front, surely the same reasoning applies.'

This wanted just a little thinking out, and my contention, stripped of any technicalities, was that the car was actually pushed. It was entirely a question of distinguishing between a push and a pull. Obviously, the propelling levers of the car, i.e., the driving wheels, were at the rear, and in thrusting against the immovable road, the car as a whole is pushed forward. One speaks of "propelling levers," as the wheels must necessarily be regarded as an infinite number of rotating levers.

Conversely, if the engine were placed behind, and the front wheels transmitted the power, then the car would be pulled. Front wheel drives are, of course, not a novelty, and obviously it is quite practicable to have car pulled and pushed at the same time by driving on all four wheels.

This curious question brought back to mind an idea of certain early motor inventors that it is the only correct principle for the engine to pull the load, as the locomotive pulls the train, and as the patent records show, some very funny inventions were brought out in the early, days to embody the idea. The fact is a locomotive pushes itself and pulls the train.

## OHIO LEADS AMERICA IN AUTOS.

Every state except Montana in the U. S. has a larger number of automobile registrations than on July 1, 1919, the largest gain being in Ohio, which shows a gain of 102,174:- Ohio is first in total registrations, having 567,000 cars and trucks registered.
cars in the ratio of one car to every six persons, which is another way of saying that every farmer is a car owner.

And it will bo the sume story over again in (hina just as soon it the car owning clase becomes sufficiently important, in numbers, to bring about the change. All car owners think the same way about good rouds, and when mon think alike they are mentally organized, which is a neessitry prelude to organized action.

It is through the sale of cars, therefore, that China witl get good roads. Sell the cars first and tho rovids will follow as an inevitable result.

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## Accessories of every kind

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## MOTOR CAR <br> AT MOST REASONABLE PRICES

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Sole Agents for B.S.A. Motor Cycle

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CARS FOR HIRE
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## Hour, Day or Month

## Rebuilt Cars for Sale

These Cars have been entirely rebuilt in our shops and are fully guaranteed.

Repair Department Under Supervision of N. G. Dronnikoff, M.E.

Expert in Ignition Lighting and Starting
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## STUDBAKER LIGHT SIX <br> PROVES POPULAR

Fills Demand for an Efficient. Durable and Economical Light

Weight Motor Car



The Studelaker eompany has discovered that the "Light Six" model now featured as a leader in the lime put out by that organization is wimning an increasing popularity all orer the world, and this popularity, the compeny oflicials and thonsands of Studebaker dealers believe, will be enhanced this season. This belief is also shared in by the local dealers, The Shanghai Horse Bazaar and Motor Co., Ltd.


Fender aprons keep mud and water out of radiator


The surimgs-scmi-chipticare long and flexible

The car was placed on the market hy the studebaker company in preference to its light four. The six cylinder construction gives greater flexibility, greater smoothness and comfort, and because of improved motor design approximately the same fuel economy.

The new Studebaker motor, with inclined valves, found instant acceptance and in the new light six this motor holds the place of honor among many Studebaker refinements and improvements.

For the manufacture of this model the compay put up a new and complete plant at south Bend, costing upwads of $\$ 15,000.000$. In this plant buildings and cquipment are of the very latest and best design. Special attention was given to the tool equipment, which is complete and of the very highest quality. This equipment makes it possible for Studebaker engineers and mechanics to work to very fine limits, and this in turn insures a car with the absolute minimum of vibration.

One of the things in faror of this Sturlebaker car is the
fact that it is produced practically complete in the Studebaker factorics, making it a "manufactured" car in the best sense of the word. This has a deep significance to the buyer for the reason that it means only one profit-the manu-facturer's-on the various parts that go into the making of the car.

The motor, as stated, is of Studebaker design, and has that great Studebaker feature, inclined valves. The advantage of this construction is so well known and greatly appreciated that it is hardly necessary to go into details in explaining it. Briefly, therefore, it may be said that the valves, which are of the standard cast-iron type are inclined toward the centre of the cylinder at an angle of 20 degrees. This inclination aids the free passage of gases to and from the cylinder, makes possible a more compact and symmetrical combustion chamber, and in addition thereto renders the whole valve operating mechanism much more accessible. The valye mechanism consists of a bell-crank lever with roller contact to cam, and with adjusting screw to valve stern. The bell-crank lever gives a maximum valve lift from minimum cam lift and insures quicker opening and better timing. The roller contacts to cams are quiet to a degrec not obtainable when the usual tappets are used.


The camshaft on the left side of the engine, and the accessory shaft on the right, are driven from the crank-

# the GOLDEN HORSE CIGARETTES 

## A SMOKE <br> YOU WILL LEARN <br> TO LOVE

AS SO MANY
CRITICAL SMOKERS HAVE


## BEEN CAPTIVATED BY IT

## NANYANG BROS. TOBACCO Co., Ltd.

Shanghai, Peking, Hankow, Tientsin, Canton, Hongkong, etc.
shaft, at the front end, by a silent chain. The substitution of chain for timing gears contributes to the remarkable


The motor is compact, with clean appearance quietness of the engine. The chain runs in an oil bath fed by the oil pressure pump, and lubrication is positive. Quick adjustment may be made without removing the gearcase cover.

A special advantage possessed by this motor is a form of design which makes possible the greatest amount of power from the fuel used, and particularly from low grade fuel. An ingenious arrangement of induction manifold and internal hot spot insures maximum power from low grade fuel. This is a distinct Studebaker invention, and one of many on which the company has been given patent protection.

The cooling of the engine is automatically regulated by thermostat, which automatically regulates the volume of' water that pases through the system and maintains it uni-
form temperature of water. This means less heat loss, and that, in turn, means more power.

The Studebaker light six is manufactured in three models, touring car, sedan and landau-roadster. Their individual characteristics are:

Inclined valves give
a compact com.
bustion chamber


Touring Éar: five passenger: weight こ.t() prounds: outside and inside door handles: genuine leather upholstery; gyps type hood with beveled phate glass window: in rear: side curtains opening with doors.

Sedan: five-passenger: four doxes that swing wide open: exten broad windows: dome light: mohair velvet phush unholstery ; ventilator at driver:s leot : hoof of these Ply ainplane wood.

Landan-Roadster: Iwo-passenger: gemme keather uphelstery: windows lower into doons and entioe lop folds bate, conserting landan-wadater intor open two-passenger roadster: compartment under war deck for tioss amb luggage.

# Shanghai Will Have A Big 

## Automobile Show Next Fall!

## Engineers Forecast Improvements in Design

 (Continued from page 58)said, "when we run a test on a single cylinder engine we do not have the difficulties that immediately occur when you add other units of the same design, in which case the distribution of the charge seriously effects the results."

He also pointed out the difference between auto-ignition and pre-ignition. The knocking in the cylinders due to pre-ignition is different from that of early ignition. In fact he smphasized the point that it is possible to have early ignition with some fuels without any knocking.

The most interesting remark he made was that the best anti-knock additions to a fuel were the best varnish removers. They are also carbon removers. Benzol for example was mentioned. Carbon in the cylinder when analyzed has a very little carbon, a little hydro-carbon, some hydro-oxygen compounds and mostly binder which was dissolved by the varnish remover and the residue blown away.
A. L. Nelson in his very complete paper on engine design with regard to fuels pointed out the possibility of getting marked increase in fuel economy by using higher gear ratios, different valve timing and pre-heating the heavier constituents of the fuel mixture. He showerd that it is possible to get 20.5 miles per gallon with a 4.5 to 1 gear ratio; 25.5 with a 3.5 to 1 ; and 31 with a 2.5 to 1 ratio. He also - stated that it ought to be possible to reach even 48 miles per gallon. His tests showed that we use only 15 per cent of the

## FOREIGN COUNTRIES TO HAVE U.S. HANDBOOK

-When the next edition of the National AutomobileChamber of Commerce annual directory, the "Handbook," shall be off the press and ready for distribation, it is expected to have a complete glossary adapting it to the needs of foreign trade. Thus, the volume can not only be sent abroad, but is to perform its full service through a set of translations of automobile terms used in the book, and through additional information covering shipping measurements and weights.
available power up to 40 miles per hour and that the rest of the power is only available for acceleration and hill climbing on high gear.

The most important matter presented during the fuel session was the fact that due to improper adjustment the average car was wasting no less than 30 per cent of the fuel used. This was evidenced by elaborate tests made by A. C. Fieldner and his assistants at the U. S. Bureau of Mines. This work was done in cooneration with the New York and and New Jersey State Bridge and Tunnel Commissions, for the purpose of determining the facts in connection with the ventilation of this tunnel. He pointed out that gas analysis is very easily accomplished by the chemist and that every large truck and taxi company could well afford to provide sampling tube attachment to their exhaust pipes between the engine and the muffler for this purpose.

## W. Canning \& Co., Ltd. Birmingham Manufacturers of

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## CARS AND TRUCKS IN AMERICA

| New York | 651,796 | Georgia | 144,422 | Maine | 62,907 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ohio | 616,800 | N. Carolina | 140,860 | Montana | 60,646 |
| Pennsylvania | 570,164 | Virginia | 134,000 | Arkansas | 59,082 |
| California | 568,892 | Colorado | 128,951 | Florida | 57,000 |
| Illinois | 568,759 | S. Dakota | 122,000 | Idaho | 50.750 |
| Iowa | 437,300 | Connecticut | 119,134 | Rhode Island | 50.375 |
| Texas | 427,634 | Kentucky | 112,685 | Ultah | 42,60.4 |
| Michigan | 412,717 | Maryland | 105,000 | New Hampshire | 34, (680 |
| Indiana | 332,707 | Oregon | 103,790 | Arizonat | 84, 559 |
| Massachusetts | 304,631 | Tennessee | 101,852 | Vermont | :31.62\% |
| Missouri | 295,817 | S. Carolina | 2, 2,818 | Wroming | 23.9220 |
| Wisconsin | 293,298 | N. Dakota | 90.8 .10 | New Mexico | 22.109 |
| Kansas | 265, 396 | West Virginia | 75.862 | Welawame | 18,300 |
| New Jersey | 226,459 | Alabama | 74,637 | Nevada | 10.46 .4 |
| Nebraska | 223,000 | Tonisiana | 66.000 | 1). of ${ }^{\text {c }}$ | 9.713 |
| Oklahoma | 204,300 | Lotisiana | 66,000 |  |  |
| Washington | 175,000 | Mississippi | (i.1.00) | 'Lotal | 287.573 |



On the recent ENDURANCE RUN from Los Angeles, over two mountain ranges, to Yosemite Park, Cal., U. S. A. a stock car covered the distance of 355.5 miles averaging 20 miles to the gallon and used only $I^{\frac{1}{2}}$ pints of oil.

> Also Patterson 6-cyl. 7-Pass. and Crow-Elkhart 4-cyl. 7-Passenger Limousine in Stock Dixie Flyer 4-cyl. to arrive shortly
> Complete line of Tires, 0ils and Accessories carried THE FEI LUNG COMPANY
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> hire service, $153-4$ Hupeh Road. Phone C. 4133.
> SHANGHAI AUTOMOBILE Co. SHOW R00MS \& SHOPS, F. 1787 Bubbling Well. Phone W. 933,
> Our Bubbling Well Shops are fully equipped for Body Building, Painting and Overhauling.

## HOW OREGON DEALERS CREATED INTEREST IN THEIR SHOW

## Telegram Used As Invitations; Buying Greatly Stirmulated

Portland's twelfth annual automobile show, January 10 to 15 , more than any other ever held in the Pacific Northwest was a selling effort on a big scale. It was thoroughly and efficiently organized to that end. Its unwritten slogan was, "Break the buying strike," and to achieve that purpose and sell the automobile back to the public, its exhibitors worked together as they never had worked together before at any show

Thero have been larger automobile shows in Portland than this one, but never one with anywhere near as much enthusiasm and selling energy. Last year, for example, there were a good many more exhibitors and a good many more cars. Those were the good old days of the buying era, when the public was rushing over itself to place orders for anything on wheels. Many of the cars then represented in the show are not even in the Portland territory now, and it is just as well that some of them are not

Buc what this show lacked in mere quantity it abundantly made up in quality. Every car entered was of standard make. All told there were cars of 53 makes on display, and a total of 137 models. They completely filled two floors of the Portland City Auditorium-50,000 square feet. Pretty fair for a show that placed its emphasis on quality rather than quantity.

Of 38 members of the Automobile Dealers' Association of Portland, 36 were exhibitors. That indicates the interest taken in the event by the dealers.

I'wo incidents will illustrate how earnestly the show was conducted as a selling drive instead of a mere displaying of pretty models. One was a mass meeting of every dealer, sales manager and automobile salesman held in the municipal auditorium at 9 o'clock Monday morming, January I', just before the doors were opened for the show. At this meeting good speakers made snappy selling talks, to inspire the salesmen with energy and enthusiasm and to emphasize to them the importance of concentrating on selling the public once more on the automobile. To insure that no one should overlook this meetirg, a unique means. of calling it to their attention was employed. On the Saturday afternoon previous, Weitern Union messengers delivered to each exhibitor a paid telegram announcing the meeting and urging him to be present, and to see that his sales manager and salesmen were present without fail.

The other incident was the adoption of a rule that freetickeis to the show, for the first time in Portland automobile show history, would not be given to wives or sweethearts. of salesmen. This was not done as a measure of economy' or because the directors of the show had any prejudices
against wives and sweethearts, but simply to make it easier for the salesmen to concentrate on the business of selling, by eliminating possible distracting influences.

In their selling drive the exhibitors did not figure so much on making many sales at the show as on selling the idea of the automobile back to the public, which temporarily had lost the desire to buy, and to cash in on future business. Consequently, no chance was overlooked to impress on show visitors the stability of the automobile business, the fact that auton obile prices have responded to the general downward trenä, and the further fact that nothing is to be gained by putting off the purchase of a car to a later date in the hope of getting still better prices.

As a first aid to the salesmen in driving home these points, reminders in the form of neat hand-painted cardboard signs, mounted on easels, mat visitors at every turn. These cards bore messages like the following :
"There will be a shortage of automobiles in 1921-buy now." "Your old car is worth less every day-buy now," and many others.

The dates of the show fitted in well with the plans for making it the opening drive in a big selling campaign. Heretofore Portland shows have been held either late in February or early in March-in short, after the buying season was well under way. November and December normally atways are dull months in the automobile business in the Pacific Northwest.

This time the dealers thought it all over carefully and concluded that the logical time for an automobile show in Portland, particularly this year, is just before buying would resume under normal conditions. They argued that by hold. ing the show just at that time instead of later, they would stimulate interest just that much sooner, get the benefit of that much more business, and make the show the opening of a sustained spring selling campaign.

So much for the actuating spirit of the show. Having set out to make it a real selling event, the dealers did not overlook the necessity of making it attractive. They went one better by making it more attractive as a display than any previous Portlan 1 automobile show.

The decorations were on a scale not before attempted, though last year's event had set a high mark. The motif was an outdoor effect in the auditorium. Hand painted panels extending around the main floor depicted horizon scenes on Columbia River Highway. The ceiling was hidden behind a blue sky ard thousands of lights, hung in huge chandeliers, gleamed brilliantly. Birch bark was freely used for trimming, and on the lower floor to conceal posts. The same scenic horizon and blue sky effect were worked out on the lower floor; as on the upper, where even more lights were used than on the main floor. They covered every post and gave great prominence to the cass on display. More than twice as many iights were used as at any previons automobile show in Portiand.

Pive thousand artificial cut roses, seented with rose perfume, were festooned on trellis arbors on both floons.

Several special dis:s and nights added immensely to the general interest.

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Touring Cars with wire wheels. Sedan Cars Limousine
Cars have just arrived and we are willing to dispose at extremely low prices. The above Cars offered are STRICTLY NEW.
Write for further particulars to
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The leading Hotel in Tientsin, delightfully situated, facing Victoria Park, and located in the Centre of the Town's Life and Business.

> Spacious and Luxurious Dining and Reception Rooms. Bedrooms with private Baths and Toilets.
> First Class Cuisine and Selected Cellar, under Foreign supervision. Central Heating, Electric Light, Modern Sanitary Arrangements.
> The only hotel in Tientsin with own water supply. Artesian Well 250 ft . deep.
> Hotel Motor-Omnibus and Porters meet all Trains and Boats.
> Cable Address "ASTOR"

the managenent

## Woman Makes Tientsin-Peking Trip

(Continued from Page 32)
The trip was undertaken for the purpose of gathering तata and finding the best and shortest roads between the two cities, no effort was made to set any speed records.


Lunch at Ho Shi W'u
The roads as a whole are in fair condition and any good car can make the distance in from five to five and one half rours running time. Mrs. F. F. Spielman wife of the Manager of E. W. Frazar \& Co. who drove one of the Dodge Brothers Car all the way from Tientsin to Peking was a member of the party and can lay claim to the distinction of being the first woman to drive a Motor Car over the road ro the Capital from Tientsin.


Crossing river on ice at Yangtsun
Since making our last run more than twenty cars have travelled the same road. The Tientsin Motorists are very enthusiastic and a large number of them made the trip during the Chinese holidays, and with the booklets and maps which we are distributing gratis to interested parties these trips should become quite popular.

We have been assured by good authority that work will he commenced very soon to build the new road from Tientsin to An-Ping (a distance of about 46 miles by our map)
where it will join the new clay road to Tung Chow，a distance of 20 miles．The Tung Chow to Peking road is macadam and in very good condition．


At Yangtsun preparing to cross forry
Following this trip quite a number of Tientsin motor－ ists have made the same journey and all report that the map and booklet prepared by Frazar and Company was of great help to them．

## N．C．MOTOR CLUB HAS ANNUAL MEETING

The Annual General Meeting of the North China Motor Club，will be held in Committee Room of the Gordon Hall，Tientsin，on Friday，25th，1921，starting at 6.30 p．m．

## HAWAIIAN PROSPECTS GOOD

Pomulative centers in the Hawaiian Islands are not ex－ actly bunched．The city of Hilo is about 700 miles from Honolulu，by ocean．Few know the rather vast area of the entire group of islands．Some even get Honolulu，on Oahu Island，mixed up with Hawaii，the largest island－like the European who thought Ohio either was part of Cincinnati or close to it．Two of the 12 Goodyear service stations are 500 miles apart．

E．H．Hollenbeck，Goodyear＇s Hawaiian representa－ tive，says there were about 9000 motor vehicles in 1920 ； about 1000 of them trucks，operated by orientals．About 500 motoreycles are used ； 50 of them by police．of pmen－ matic tired trucks there are 30 ，in delivery and plantation service．Goodyear fiscal year sales increased 70 per cent．

Despite lack of good highways，the automobile outhook is pleasing and the trade is optimistic．There have been bumper sugar and pinapple crops．The natives are making excellent wages．The 1920 pincapple prack was $6,000,(100)$ cases，worth about $\$ 40,000,000$ ．

Thrifty plantation and other well paid workens are leasing land at easy rates．Very little land is for sale． Population of the islands is 255,000 ．Notor vehicle ratio， 1 to 28.

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## GOOD ACCESSORIES BIG AID IN BOOSTING BUSINESS

Motoring Public Is More Discreminating Than Formerly

How are your accessories? Know what you want-or need? Got them all? Know how to use them to the best advantage. Are they of the best make, or just something thrown in with the car by your dealer when you bought? Did he show you how to use them? They are some of the "things" about a car that you should know, and it also opens up a good business for the live dealer.

It's usual, of course for the manufacturer to equip his car with everything that's needed to make the car run. But that isn't all. There are certain very important accessories which most care do not possess when they arrive in the owner's hands. Some new car drivers wait until the time comes to use such an accessory before they think about the real need for it, but the wise buyer will at once equip with the essential things.

First among these come tire chains for driving in rainy weather and on slippery streets. Some cars are already equipped with these, but they are few. Before the car is driven away from the dealer's show rooms there should be a set of skid chains in the tool compartment. Next to the chains comes the jack. It is quite possible that the jack supplied is one that will work more than once, but often the very cheapest sort is supplied. If the one furnished is
not of the best sort it will actually pay to get rid of it and buy the best jack made. While it is not fair to anticipate tire trouble with a new car, there is such a thing as a tack or nail, and they make no distinction between new and used tires. A rim operating tool is the next essential and with it comes the vulcanizer. In other words, tire equipment, even though new, should be considered as a potential trouble maker. The rim tool makes it easy to detach the nim from the tire, the vulcanizer makes a fube patch a matter of a few minutes. A tire repair outfit will naturally suggest itself with the vulcanizer and above all a tire gauge.

The dealer inflates the tires enough to run the car, and a few of them pay much attention to the right pressure. It is up to the owner to get the right pressure into the casings, even though the run to the home garage is only a matter of a. few miles.

The average motorist locks the door after the horse is stolen, he thinks about car insurance after he gets the car. It would be interesting to find out how many brand new cars are removed from garages. The wise buyer will have complete insurance before he gets his car from the dealer. The latter, in most cases, is in a position to take care of the whole matter, charging no more than standard rates.

## ROAD FOR GUATEMALA

The road from Guatemala City to San Salvador, ress pective capitals of Guatemala and El Salvador, is being built to a width of 30 feet, hard-surfaced and prepared for automobile and motor truck traffic, according to Irigoyen Cob, a banker of Guatemala City who is visiting in America. Another link of road, 110 miles in length, is being constructed by army engineers of both countries, from Zacapa in Guatemala, to the Salvadorean border. Still another link, 10 miles in length, which will open the way for a highway from the norther border of Guatemala to Mexico City, capital of Mexico, is being built, according to Cob.

If the dealer will not attend to it, it should nevertheless be done before the car is delivered, so that an accident or fire on the way home will not mean a loss to the owner.

With practically all laws requiring some form of head lamp glare remover, many factories are fitting special glass fronts as standard equipment, but still a greater number of cars come through without such equipment. We have known owners to be stopped by traffic officers, before an opportunity was afforded to purchase suitable non-glare fronts. In cases where the factory does not supply such devices the dealer will be glad to fit new lenses of any make.

In these days car thefts are numerous, and while theft insurance protects the owner, there is no assurance that a new car will be forthcoming within a reasonable time. A good car lock, while it may cost $\$ 10$. or $\$ 15$, is worth the price. Car thieves have a particular liking for new cars, but a suitable lock, such as a transmission lock or a steering wheel lock, will do much toward keeping the thief away.

A storage battery hydrometer is a most important piece of equipment which may have immediate use. It should be used the day the car is received, and in warm weather should be used to test the storage battery cells every week. Many storage batteries have literally been "shot to pieces" in the first month of use because of lack of attention to water filling and testing.

T'ool equipment in the average car is sometimes sotcly lacking in quality. The cheapest kind of wrenches and pliers are supplied. I know a great number of owners who use the equipment set merely for spares aromed the grame, purchasing a good nsuble set for the car:

Among others, it spotlight is it useful addition to the car's equipment, though not ins orscontial ths some of the others provionsly mentioned. In the same class with the spotlight comes body polish and car cleaning pamphematia, especially a compound which will temove road tars. Nothing is more disheurtening than to bespatter anew body with road tar, which, by the way, must be ecmoved within a few hours or it wili leave indelible markis.


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## WILLYS-KNIGHT PROVES WORTH IN LONG DISTANCE TEST

Sleeve-Valved Engine, in American Car, Shows Remarkable Hill Climbing Ability and Smcohness of Operation,

The latest model Willys. Knight touring car. cquipped with ther famons slice ialie motor


THE NAINY advantages of the Kuight sleeve-valve motor are coming to be more and more appreciated by motorists, particularly that greatest of all advantages which is so cleverly emphasized in the advertisements of The Central Garage Company, Shanghai, to wit: "It improves with use."

Motorists are finding out in large numbers that this motor actually does improve with use-which is not hard to understand when one acquires a knowledge of the principles upon which it is built.

The sleeve-valve motor is different from all other typer. And because of this fundamental difference, the carbon formed by the burning of the lubricant and the charge in the cylinder heads actually helps to make the engine more compression-tight, so that it can be truly said that the longer it runs the better it becomes.


it does not interfere withentry


Alemite lubricators aroid messy grease cuts


Accelcrutor foot rest.


The reat seats are Tuxurionsty uphotstered. A step Tigtut, roof lamp and windou lifters are provided
substantially made to be free from objectionable creaks and noisos.
'A feature in the location of the controls is that the brake lever is on the right hand side, while central contic] for the gears is provided. The position of the brake lever is such that it forms no obstruction when entering or leaving the car by the off-side front door, and the longth of the gear lever brings it within easy reach of the driver's left hand.

Fuel consumption works out at about 22 m.p.g. The springing is distinctly good and is considerably assisted by the depth of the upholstery. With further regard to the brakes, they are very smooth and very powerful.

It was on the return journey perhaps, that the car was driven hardest, a speed of $40-45 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. being maintained with the greatest of ease and even up some of the fairly steep gradients. The thermometer on the raidiator showed no signs of the cooling water becoming unduly hot, adithough there w'as a following wind, while the ease ${ }^{-}$ control enabled us to drive for practically twenty-four bous without the least feeling of fatigue.


A ventilator in the cowl makes for foot comfort


A windshield cleaner is provided

With reference to the mochanical details the fout. cylinder engine has a bore and stroke of $3 \frac{5}{8}$ ins. by $4 \frac{1}{2}$ in:., or 92.1 mm . by 114 mm . The cylinders are cast on bloc with their separate heads romovable, and an aluminium cover is provided. Tho crankshaft is supported in thece bearings, and at the front a single silent chain sorves to drive both the eccontric and generator shafts.

Oil is forced under pressure from a rotary pump, driven off the eccontric shaft, to tho crankshaft, connecting rors, and eccentric and generator-drive shaft boarings, the slecves and other moving parts being supplied by gravity or splash.

A Tillotson carburetor feeds the mixture to the sleeve ports throngh passages which are cast intogral with the cylinders. It is attached to the exhaust manifold, so theti it can recejve an adoquate quantity of heat, and it also has a. single adjustment to enable tho jet selting to be chatssed to moet variations in fucl quality and atmospheric conditions.

The gasoline system is unusual in that a fuel rump is fitted, which actually draws fuel from a tank at the roar of the chassis and supplies it under pressure to the carburetor. Naturally, this combines the advantages of the vacuum and pressure systems without any of the disadvantages of either.


Ignition is effected by a high-tension magneto, and the plugs are situated directly over the centers of the passages.

From the engine the drive is taken through a single plate clutch, which runs dry, to the three-speed gearbox.

Semi-elliptic suspension is employed both fore and aft, and the rear springs, which deal with torque and drivethe Hotchkiss system being employed-are $54 \frac{3}{6}$ ins. long and are made up of seven leaves.

The four-cylinder
engine has a parti-
culurly cleall und
neat appearance


The enar of the chassis is upswept slightly and downswept at jis end to allow phenty of axde mewiment to bo chatince with a low booty position, and this also hats the offect of minimizing -side sway and making the car steady on corners.


## A GCOD LOCATION IS BIG BENEFIT TO DEALER

Business Building Suggestions by Experienced Distributors

If the average garageman would only realize that his patrons are fast becoming well traveled puons as a result of the identical conrenience which makes it necestsiay for his particular business, and that in their travels they camot lelp being observant, he would have no difficulty in seeing that this orm personal interests demand that ther be given the best of efficient service.

The patrons pemmently resident in his temitory, as well as his tourist patrons, are not slow to recognize and appreciate efficient service. It is only natural that they should find a great many opportunities for making com-parisons-and comparisons are sometimes odious, even if they be made mentally.

In plamning a building for a business in whith the pro1 rietor is personal head of the departments, the business office, in which much of his time will be spent while he is in the building, should form the heart of the plan-and all other departments should be so placed in relation to the locaion of the business office as to be within easy access of it. The ideal plan will so arrange matters that all the activities of the business will be under the eye of th proprietor-and this is not because of any fear of dishonesty on the part of any of his employes.

The space for the storage of cars will, of course, form the grace of the building. It is in this spacs that gasolene and oil are sold; it is here that preliminary examination is made of cars needing repairs. In a garage having a frontage of, say, 50 feet, this space will probably be better at the rear of the office and salesroom. In wider garages, the whole of one side may be given up to the storage of cars, in which case it should be located preferably on the side farther away from the business center of the town-that is to say, people coming away from the business center should have to pass the offices and salesroom before reaching the garage entrance.

As the business of providing cars with gasoline and oil is largely a cash business, the plannings should be so arranged that cars may be replenished at some point near the office at which payment should be made. Some garages use a portable tank, others are equipped with pumps in a permanent location. In either case, the filling should be done at a spot convenient to the office so that payment may be made directly to the cashier.

Provision should be made for a good display of seasonable accessories to people who have been attracted by a display while their cars are being filled with fuel, oil and water,

## IMPERIAL MOTOR TRANSPORT CONFERENCE REPORT NOW AVAILABLE

Copies of the report of the proceedings of the Imperial Motor Transport Conference held at Olympia，October 18th to $21 \mathrm{st}, 1920$ ，are now available at a charge of $8 / 6$（post free）．The report includes all the papers read and the discussions in full and is obtatnable，in response to postal aplication，from the Hon．Secretary to the Council，Mr． Horace Wratt，Royal Automolile C＇lub，Pall Mall，S．W．I．

It should be lome in mind that the business of con－ ducting a garage depends，for its very existence and success－ ful continuance，on the combination of two very important factors：The measure of service given to the automobile－ using public by the garage ；and second，the financial re－ turns to the proprictor in the form of profits which makes it worth his while to devote his time and the use of his capital to the enterpise．

Some garage prcpretors may be inclined to question this wisdom in assigning a position of premier importance to the＂Service＂element in the combination，inasmuch as to use the vernacular，no one engages in business＂for＇ the sake of his health．＂In other words，no cne is likely to devote his time and invest his capital in any business were it not for the allurement of profits．

There is one thing wonderful about Anerica， geographically；it is a country of great distances－and the coming of the automobile has had，and will continue to have，a great deal to do with the development of the country， just as the railroads have done in the past．The automobile has dissipated distances ；it has lessened the loneliness of our agricultural population；it has provided a practical and effi－ cient means of marketing the products of farm and factory； it has extended the borders of our urban centers in a man－ ner little dreamed of 30 years ago．It has become a house－ hold necessity．

But like all luxuries which have become household necossities，the automobile needs attention，needs fuel，needs repairs，noeds storage space when not in use，needs occa－ sional overhauling，needs a groat many added accessories to increase its utility；and because it necds all these things in reason and in season，tho gitage business exists．The garage businoss is essentially a buriness of service

The pationage of at gatage is drawn fom two solmees which may be broadly classified．

First，the fermanent clients in the teritory directly ferved，whe，whether in the city or the commery，find in the automobile a conveyance of utility．

Second，the tramsient or tourist dients who for tho time being，either for pleastme atone or for business ： m .1 pleasure combined，took upon the use of the amtomotrike an at semi－luxury．
 of revente－and fegitmate revente al that for very gitame．


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## EUROPE PAVING WAY IN FUEL SAVING IMEASURES

Small Engines, Good Roads, and Gear Shifting Are Factors

To the Ancrican traveler in E'urope the automobiles he sees there with tiny cngines which necessitate a change of gears to negotiate eren a small hill are highly amusing. Wre have been in the habit of using cars equipped with engines with a great deal of surplus power. Car owners speak with pride of long trips over hilly roads which they have taken without changing from high gear any of the way.

It is easy to overlook the fact that this is due to the huge quantities of fuel that we have had at our command and its very low price. Had we possessed a emaller supply of gasoline and had gasoline sold at a higher price we would not have lieen so extraragant in its use.

Whithout cur supply of low priced gasoline we would never have been able to develop the automobile industry in this country to the extent that we have. Our roads are not as good as those upon which most of the European cars, are used. A car that gives satisfactory service there would frove useless for any sort of touring purposes in this country because of the condition of the roads and this was truer ten years ago than it is to-day.

One way, therefore in which a great deal of gasoline can be saved is by building better roads and by making themuniformly good throughout their length. No matter how good portions of a road may be if there is a bad stretch, the automohile that tiaverses it must be powerful enough to pass throu:gh the bad scetion unaidel.

In the past it has been cheaper to buy gasoline than it has to spend the money necessary to build the best possible roads. With the enormous increase in the number of cars in use and with the price of gasoline rising, the point is being reached where it will be cheaper to invest the money in roads instead of in fuel.

To-day in this country we have one car for every fourteen people. It is estimated that in another year this will reach an average of a car for every ten people or nearly one car for every two families. With this large number of cars in use it becomes very much cheaper to pay a higher road tax than a higher gasoline tax, especially as the price of gasoline is tehding upward and will probably continue to do so for some time to come.

In fact it is a wodner that the price of gasoline has not tisen at a more rarid rate than it has, for during the past fifty jears we have increased our consumption of petroleum to such an extent that we are now using more than seventy five times as much as we did in 1870. The consumption of the future promises to go on at an ever increasing rate unless everything possible is done to economize ite use.

THE NEW AEROMARINE SEAPLANE


A six passenger air and sea limonsine

Good rcads save motor car fuel in two ways. First no car will consume as much gasoline and oil when driven over a good road as it will when driven over a bad road. This is something that every car driver has already learned. Second, good roads make it possible to use cars with smaller engines.

A waste of gasoline that now is becoming more and more serious as the number of cars increase is due to the use of engines much larger than are necessary and a smaller number of speed changes than is required for the most economical operation. Manufacturers cannot be blamed for this state of affair:. Attempts have been made to manufacture light cars aftrer the European models but it has not been possible to sell them to the people of this country. The things that motor car owners have demanded have been high power, easy and convenient control and in some cases actual luxary.

The best results are secured from a gasoline engine only when it is running under full load at its most economical speed. In the case of our present vehicles the engines are running under this condition only a very small fraction of their time. They are sither running too fast or too slow to give the best results.

One way in which this state of affairs can be and no doubt in time will be remedied is by equipping the car with a larger number of speed changes and smaller engines.

There, however, are two things which must be accomplished before this can be done. It is all well enough to talk about more speed changes and smaller engines, but these will not become practical until we have better roads and lower grades on hose roads. No matter how well a car may operate on 98 per cent of the roads it may be driven over, no matter who economical it may be on these roads, if that car cannot be driven over the other two per cent of the roads it is desirable or necessary to travers it is not a practical car.

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Large stocks at our Shanghai Onfices and Store 17 MUSEUM ROAD, SHANGHAI.


IT PAYS TO KEEP EYES PEELED FOR SALES TIPS

One Dealer Tells How Barber Helped Him to Sell Cars

"One of the best sale, tips I ever received," said a dealer during our conversation on varions means for getting Lusiness, "was from a barber."
"A tip on the races or the weather?" I inquired.
"Xeither," he replied, but a stunt tha: made me sit up and take notice, and all it cost me was the price of a haircut and a shave.
"It was one of those Blue Mondnys-business was was dull, I was out of sorts, just sitting around the store waiting for something to turn up. The ringing of the 'phone put me in action. 'I'll be down this afternoon,' I remember saying in reference to the call."
"I suppose it tras one of four good customers," I offered, "requesting you to call noound and get a nice order to brighten up the day:
" $\mathrm{N}_{0}$, it was John, the burlar," explained the dater, "John, who had neter taken a lesson in salesmansliip in his life.

The barter said that he had missed my face in his shop for some time; that he could not understand why I had Peseated him; that he ahways appreciated my colls and hoped I would drop around and see him soon.
"He apoligized for 'phoning me, knowing that I was a busy man, liut customers were scarce just then and he
was using the leisure time iphoning some of the old familiar friends to get them back into the chairs where they belonged.
"I'll tell you, man, when a barber takes enough interest in me to 'phone me that I have been missed from his place, and hott he appreciates my ratronage, he pulls a master stroke with me and deserves my trade.
"And when I put down that receiver, I said to myself : 'John Smith, dealer in tires and accessories, take a tip from John, the barber,--Go thon and do likewise.'

I kent the local line buas that day pulling business over the wire."

Pointing to the 'phone, the dealer reflected: "That hns been the livest salesman and business getter in this store.'

He lifted a book from beneäth the " 1 hoine and contintued entbusiastically :
"This contains the names of my prominent customers and rrospects with their addresses and 'phone numbers, Whenever I get in certain accessories that I know will prove of interest and value to certain customers. I give them a uing and invariably they respond with a purchase.
"Take for instance right now, accessories for winter use. Jou can't realize how much I've booked already for

# MOTOR CAR INSURANCE 

REDUCED RATES<br>and<br>SPECIAL CONDITIONS

## GENERAL

ACCIDENT, FIRE AND LIFE

## ASSURANCE <br> CORPORATION, LIMITED.

For prospectus apply to the

FAR EASTERN MANAGER;<br>4A PEKING ROAD, SHAIGHAI. or WHEELOCK \& Co., French Bund.

tire chains, anti-freeze, radiator covers, etc., besides inviting mp friends to call and inspect my stock of auto gloves and robes when they contemp'ate purchasing.
"You may think it a joke but I have future orders on my books for five barrele of alcohol (all denatrured) sold over the telephone in small lots to a large number of customers. I had lots of fun joshing them on the necessity of laying in at least a gallon for winter consumption--that kind, of course, that is particularly desirable for spiritizing the water in the radiator to prevent the contents from becoming arathetic this winter.
"Why I could take a dozen items, seasonable and in constant use, and show you how successfully my hobby of selling over the 'phone has panned out. I kecp my customers sold, too, over the 'phone.
'Often I drop down of an evening, run over the sales dating back over three or four months, showing tires and other accessories of value that have been purchased, call up the purchaser and inquire the service such items have rendered thus far, show that I am interested in soeing that the maximum sales value is receired. You can't beat this prevsonal interest stuff, my boy 1 It gets us all.
"And you see," concluded the dealer, "ull sales tipg and hints don't come from books. That ring that John, the barber, gave me is ainging in my ears yet. "-The silser Edge.


They give twice the light at half the cost of any other Motor Lamp made and are Dependable in every circumstance.

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## AUSTRALIAN CUSTOMS DUTY ON MOTORCARS

The duty payable on imported cars constitutes a much rexed question among motor agonts and purchasers, sars the "West Australian." It would be thought that pur.
 Thaly would pasy similar duties, lat suluch is mot the casse. The invoice pree is comperted into the bome purehasion price at the present mate of exchange and ten peremt added. Thus, the b ppothetical laalian cal represconts, womghy. 33,000 liza, and the American $2,0(0)$ dellats. Therse figures are converted into Britioh money at the bue or prevar
 car is asseseed att, rolghly, $[1.360$ and the lomerian at fl 10 . As the forifl fercontage is simila in cath case. the Italian car is thms worth these finces as math to the ('ustoms as the Jmodicall car.

 may be remediod hy walphing samd yew, "hath hats beot doubled, orer the shaft, so that it adts as a shim hetween gear and shaft. In this wa! both seate athl shaft hase a rough, sanded surface agatinst them, which effectuall! freventes slipring.

## A NEW DELAGE REACHES SHANHGAI



Delage 8-cylinder, 4-wheel
brake cabriolet, with Paris
body-Imported by the

Grant Garage Francais,

Shenagai

## EXCELSIOR MOTOR CYCLE THE "ULTIMATE"

## Refinements and Improvements on this Year's Models

The ever growing contingent of motoreyclists in China will do well, in considering their purchase of a mount for the coming season's use, to look into the slecifications of the latest Excelsior models, as shown by the American Trading Company's rarious offices in China.


The Newest Excelsior
The mannfacturers of this excellent machine offer for this year what they describe as the "ultimate" in motorcrcle design and construction, and an insrestion of the models reveals that that this is far from in idle claim.

It is significant; esrecially to those who are familiar with motoreycle design, that the makers of the new Excelsior lay greatest stress on the refinements of the new models, particularly on what would have been regarded a few rears ago as such relatively unimurtant matters as fenders. The mere fact that a motorcycle manufacturer emphasizes the fenders of his machine on the front page of his catalog is pretty good evidence that the motorcycle of his manufacture bas reached such a stage of perfection in all major
details that it is no longer necessary to talk about them as much as formerly.

And anyone who knows the Excelsior knows that this is very true. The power flant in this machine reached the "ultimate" a great many years ago, as has been willingly. attested by tens of thousands of enthusiastic users of this machine. For fower, speed, reliability and economy there isn't a motcrcycle engine made thąt has anything on the Fxcelsior. Wrell does the writer of these humble lines re(all the summer of 1913-cight years ago-when he was livirg in Dayton, Ohio, and the prond owner of a brand new motorcyclo that was painted a beautiful blue, with nickle plated handle bars, and electric lights and ev'rything.
"Prond" owner, did we say? Yes, quite proud until olle sorry day, when on a trip to Columbus, the state capital, with a friend mounted on an Excelsior, a little test of sneed was stuggested. Fine! Oh, yes, very fine! What that big blue distance eater would do that little old gray rcad louse, the same being said friend's Excelsior, was a whole lot. So we stazted away on a nice stretch of smooth road, and presently, when the blue streak was streaking until I thought it would chug its little heart out, what should go dusting by but that same gray Excelsior-dusting hy with such ease and abandon that he made ol' Blue Streak look like he was standing hitched to a post.

That's where I, the humble writer of these humble lines, first acquired a wholesome respect for the Excelsion, for 'pon my word, when that Excelsior shot by me that day on that smooth Ohio road I'll swear the blue streak on which I was straddled was doing a mile in nothing flat. So you can draw your own conclusions as to what the Excelsior was doing it in.

## GASOLINE DROPS IN GREAT BRITAIN

Gasoline has been reduced six cents gold a gallon in Great Britain after the sudden increase of 14 cents a gallon in August, according to advices from the American Chamber of Commerco in Lcndon to the Department of Commerce. British oil companies assign "overproduction in the United States" as the reason for the reduction, according to the Cbamber, whereas on the other hand, British consumers attribute the slump to the investigation of the central profiteering' committee into the increase in price.

## MOTORCYCLES POPULAR IN SWEDEN.

According to a report dated October 27, 1920, from U. S. Concul General D. I. Murphy, Stockholm, Sweden, the Highway Commission recently presented a report to the Minister of Finance in which the number of automobiles in Sweden was estimated at 8,500 , and motoreycles at 9,059 . In the same report the commission stated that in the city of Stcckholm there were on October 1, 19\%0, 2,137 automobiles and 1,015 motorcycles.

The Gnomo-Rhone Co. has acquired all the interest in the British A. B. C. motorcycle originally produced by the Sopwith Co., which now is in liquidation.

So it's no wonder the Excelsicr people now confine their raving to their beautiful and useful wide fenders, and to their interchangeability of parts, and to improved front bort, and such. Tke truth is, they don't noed to talk about the Excelsior motor, because the cock-eyed world knows, and has known for many reas, that there's mothing to compare with the Excelsior motur.


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## CLEANING LEATHER UPHOLSTERY.

Never use gasoline or kerosene to clean leather upholstery, because such treatment will crack it. Water to which a little ammonia has been added is as good as anything for getting the dirt off, and a brisk rubbing with a soft cloth is all that is needed to restore the shine after the dint has been removed. If you wish, you can soften the leather and assist in preserving it by applying a good leather dressing. Nothing is better, however, than a mixture of turpentine and linseed oil for treating the leather. Mix these in the proportions of two parts of the linseed oil to one of turpentine.

## BRITISH COMPANIES "OUT OF WOODS."

No acute financial distress is anticipated for any of the important British automotive companies despite the general money tightness and vehicles awaiting sale. Creditors realize that a bigger loss would follow forced closures and they have confidence in the inherent stability of the trade.

Dunlop Rubber Co. has declared that negotiations concerning the company's American affairs may last another week. Its report for the financial year is expected soon. Stockholders have been cautioned by the company not to pay attention to adverse reports on Dunlop.

## AIR CRAFT MEN AFTER CONGRESS.

Manufacturers of aircraft and industry in general are making a determined fight in Washington to induce the Senate to restore the appropriation for the Air Mail Service which the House eliminated in passing the Fost Office bill. The entire item was stricken from the House bill. The House Committee on Post Offices and Post Roads had recommended the appropriation of $\$ 1,250,000$ or $\$ 2,250,000$ less than the departmental estimates.

## AUTO MUFF IS LATEST.

An "automobile muff", has been invented to keep the hands of the motorist wam while driving in cold weather. Securely fastened to the steering wheel is a light but rigid framewark of steel over which the muff of fadded cloth or fur is fitted. The artangement is such that the person driving can operate the whed with ease.

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## FAGEOL

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## AUSTRIAN INDUSTRY IS BANKRUPT

The Anstrian motorcar industry io in a rery bad war. Geme time ago the Thion of the - lu-trian Motor Car Mammfacturers stanted an action in aid of the heme industry, with the main object of obtaining State assistance. Petitions have been made to the State Office for Finance for payments con account of their clatime uron the former Smy athinistration, and tiee state Office adranced to the T"ni $n$ and to the Daimler Works an amount of $60,000,000$ crowns each. The Thion also arplied to the sitate to aid them with it
 It is fointed cut that the ranly needs for material amomet to $2.0100,000,000$ erowns, whit that $500,000,000$ crowne are reghired to coner wage amd alani i

## GENERAL MOTORS TO AID FOREIGN FINANCING

A. H. Swarne, vice-president of the Generul Motors Acceptance Corp., who has been in England investigating
 ing distribution of General Motors preducts throughout the British Empire, has retumed. The new branch will be 'flated in comme tien with the Tondon oftione.

## TO AID BRITISH INVENTORS

The Siciety of Motor Manufacturers and Traders ( (ire::t Britain), bas roted a sum of $\$ 125,000$ (nominal (xchange) for the formation of a fund to be known as the "S. Mr. MT. T. Truet Fund" which will be used for the l'ulpere of granting relief to fersons considered eligible as baving contributed to the encouragement, promotion, or protection of the motor trade. In addition, the Society has roted a further sum of $£ 5,000$ to the Cycle and Motor Trades Benevolent Fund, bringing the total contribution of thes Socisty to that Fund to nearly $£ 14,000$.

## "SUM" SENDS A DOLLAR "ODER."

In the window of tire establishment on the coast recentIr, was pasted a letter which came from the west coast of Sumatra, and which rad :

Haring secn four adrertisement in the papuer, that you are selling tire and tube that coast only a dollar, if it is tıuth I have desire of placing you a great oder because here in my country is a lot of Ford motor car.
'I am much please sir, if you will send me one tire and tul e as a samples, when I had examine it I hope I can send a sreat oder to you, an increase your sales in west coast of sum, cond tle samm low ly prarcel post,"

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More electric starters are brought in for repairs. Garage men and service stations are called upon to recharge mow batteries. More motorists come in, sinfing "My oil gitnme is not working."

That is why correct lubrication is of particular importance to every car owner during the winter season.

Some cars should use the same oil in winter as in smmmer. Others should change to a lighter oil under winter conditions. It depends upon the design of the engine and the lubrieating system.

To provide efficient lubrication, the oil must reach every frictional surface in the engine. In many cars, an oil thickened by freezing temperatures will not circulate freely and reach these frictional surfaces.

In such cases, the thickened oil means sluggish engine action. It causes balky action in starting the engine. Frictional surfaces rub against each other without the protection of a perfect oil film. Under such circumstances, all of the evil effects of incorrect lubrication may follow.

It is of no use to blame the oil pump if the oil does not circulate.


Mobiloils
A grade for each type of motor

A car owner cannot determine for himself whether or not his engine requires a different oil in the winter than in summer: There are too many determining factors entering into this question. It is a problem for technical experiment and analysis.

The Vacuum Oil Company's Board of Automotive Engineers has carefully analyzed the summer and winter lubricating requirements of every make and model of automobile. The result of this analysis is shown in the Chart of Recommendations.

In changing from is summer to a winter recommendation, the proper method is to drain all the old oil from the crank-case when the engine is warm; pour in a quart of clean, light wabricating oil (do not use kerosene); turn the engine over a few times, by hand or starter, to cleanse the crank-case ; drain out this cleansing oil; and then refill with the correct grade of Gargoyle Mobiloils for winter use.

The results will surprise you in engine efficiencr and in freedom from "cold weather" troubles

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We continue to regard high quality and perfect performance as paramount.

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IME has proved the truth of this claim :
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## Think these things over!

No single automobile dealer or distributor is as big as all the automobile dealers and distributors together.

There are many things which every dealer and distributor would like to see accomplished, but which never can be accomplished until everybody in the trade works together.

Good roads (vital to the continued prosperity of the trade) can be brought about ONLY by organized effort.

Let's get together!

## DUNLOP

## THE NEX

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# THE <br> ORIENTAL MOTOR 

A Monthly Magazine devoted to Automotive Interests in China and the Far East Generally

# HOW MANUFACTURERS CAN HELP IN BUILDING A LARGER MARKET FOR MOTOR CARS AND TRUCKS IN THE FAR EAST 

Where New Problems Are Presented They Should Adopt New Methods of Meeting Them

IALI THE motor car manufacturing countries there has been a vast amount of talk, ever since the war, of building up foreign markets. On both sides of the Atlantic it is pretty well recognized that production has at last gct ahead of demand, with the result that the makers have been brought to a realization that if they are to keep their plants going at the pre-war rate they must have outside markets to supplement the home demand.

Except for the war, there is very little doubt that the new demand for motor cars, trucks and accessories, as distinguished from the replacement demand, would have kept up for some years before attaining the point of absolute saturation. And even after the point of saturation had been reached there would have continued an enormous de-
mand for cars and trucks for replacement purposes-old users buying cars and trucks to supplant old ones-which would have served to keep the factories fairly busy.

But the war had two effects on the motor car manufacturing business. First, it subtracted enormously from the world's wealth, and second, it brought a great increase in efficiency of manufacturing methods.

As a result of these things the manufacturers find themselves in the position of being able to turn out cars faster thin ever, but with fewer buyers for them. This condition of affairs, after ull is said and done, is what led to the stagnar tion from which the industry is just now beginning to recover.


[^66]That recovery prebabls wial mo: be e:mplete for a bong time to come-probably not until the evil effects of the war have been overcome, and that, of ofurse, is a long way off.
since the war factories have started up and everetime one of these new factories starts it means just that much keener competition for the old established concems. True the newcomers do not do anything like the amount of business


Derrick used for handling cars
of the entablished mamufacturers, but in the aggregate they sell at lot of cars. They must sell a lot of cars, becaluse these new factories keep on going and an body knows that it takes a lot of money to operate an automobile factory, even if it is only an assembling proposition.

In Europe, particularly in England and France, a great deal of effort being expended along the lines of mass production. The manufacturers over there have come to a realization that the old methods won't gio if they are t.) compete successfully with the American makers. Besides, these manufacturers learned during the war that mass production is the best way to meet a big need. They had to produce in larger quantities to meet the noeds of their armies, and from seeing the results achieved they became converts to the idea, some of thom much against their will.

WI these things mean that the lines are tightening, and that selling motor cars is mot going to he ane en-y ats it has been heretofore. The manufacturers realize this, as is evidenced by the fact hat you can hardly pick up : home newspaper these days without seeing something about efforts that are under way to develop foreign trade. Not only private individuals and organizations are taking part in these plans, but government as well. Te read that Mr. Hoover, the new Secretary of Commerce in the American cabinet, is making it his first business to seek was for improving and increasing the nation's foreign trade. In England, one of the men who is most frequently in the news is Mr. F. G. Kellaway, the Secretary of the British department of Overseas trade. There is hardly a day that this: gentleman's name is out of the newspapers. which gue:; to show that British officialdom is alive to the needs of manufacturers, and striving to meet them.

Well, then, how can the automobile and truck mumufacturers help to increase the Far Eastern market?

Nmost pitiful tales are heard from time to time of the alsolute and utter ignorance of this part of the world that exists in the heads of come manufacturers and export managers at home. Not long ago, for instance, a man from Hongkong who had accumulated a little money and who thought he would like to venture into the automobile business, wrote to an Anerican manufacturer, asking about an agency. He was told that if he would sign an agreement to take fift! (als: the fir-t year (they were high priced cars, te(o) and get his bank to guarantee that he would make grood on that agreement, and then, its it starter, send enough cash to the manufacturer to pay for the first shipment before the cars left the factory, or before they were even made for all he had any way of knowing, they would consider his application for an agence.

Fiend this the cash in advance," seems to be the one rule with a great many manufacturers when it comes to talking about building up a foreign outlet for their product. Beyond that they have not progressed.

Of course, no sathe manufacturer would send cars C. O. D. to any stranger who might ask for them, but if the manufacturers would investigate they would find out that there is such a thing as character out here as well as at home, and that it would pay them, in the long run, to gro slow, and to be willing to help new dealers along from amall beginnings, and encourage them in dozens of ways that they could learn about if they would take the trouble and patience to try.


Docli scenc, Pootung, Shanghai
In the home countries every manufacturer constantly helps the dealers with factory advertising-they literally porr money into the magazines and newspapers for advertising, and after all, what is this advertising but deaier help? The manufacturers have done even more than the dealers to create a demand for motor cars and trucks. They have "cducated" the people to the use of these great utilities. It cost them millions of dollars to do it, but they spent wihhout stint and they keep on spending.

But let a new man out here got into his head that he would like to start into the retail motor car business and he is told "send cash in advance" after which car's will bo forwarded.

This does not apply to all manufacturers, but it applies to so many of them that it can almost be said to be the typical attitude.

The manufacturers might reply that there are no advertising modium out here, like there are at home, and tbat they couldn't advertise "home side fashion" even if they were so disposed.

In a way, that is true. The English publications in the Far East do not reach enough people, and they scarcely roach at all that great class of potential buyors who mist be reached by advertising before they can be turned into car buyers, to wit, the natives, particularly tho wealthy and well to do natives.

But there is a wav in which the manufacturers could advertise in the Far East, and that is through the modium of antomobile shows. And they could advertiso in this way at a very small fraction of what it costs them to advertise at home, for the reason that the automobile show offers an opportunity for either a complete or partial return upon the money invested in them.

On my dosk there is a letter just received from the representative of a big American company, in answer to one I addressed to him in connection with the proposal to hold a show in Shanghai. In his reply he writes:
our Company considers that anto-
mobile shows should be self-supporting and that the direct expenses should be borne ly tho local distributors. You can appreciate why this is necessasy, for if the manufacturers were to contribute appopriations for


Crated cars just off the ship.
every antomobile show, they would find it an ingos ible burden to assume. I do not think there is much whane" of their making an exception in the rase of the rroposed Shanghai Show, and I douht whether any members of the National Automobite ('hamber of Commorce would lend financial assistance."

Automobile shows should be self suprorting and they are self supporting, both at home and abroad. At home the manufacturers wisely adopted the lolicy of withholding support from all except the national shows. "Wisely," because if they had adopted any other policy they would have found themselves in ondless difficulties. If they had

helpod one show they would have had to be equally genewous to all, which would have kept them hopelensly involved, to say nothing of the endless expense and loss that would have resulted from such a policy.
low another thing, the manufactures hate not hasd time to operate shows, even if they had been so inclined. Other problems were both more important and more pressing. They were entiocly occupsed in other directions-in developing their product mechamially, and in adjusting the thousand and one difficulties that alose from time to time as the industry.

But most of the diffecultios that recerpied the time of the manufactures in the past hate bern owerome. Nechanically, the cars are arproaching perfection, as is proven
 ments of detail. The factories, too, have been made more efficient. Now factories have been built; in short, the
 point.









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 of the propened shamghai show? Why shouldit they mahot all cacplem in the calo of all fowizn :hms. particultaly

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# VAST AMOUNT OF NEW BUILDING IS SURE INDICATION OF SHANGHAI'S FAITH IN THE FUTURE 

Solid, Permanent Structures that are Going up Offer Best Possible Proof that the City Faces A Bright Future

By Arther West



Ts .hamghai downheated?
Nut s) !ou could notice it ! Not if the rast amoomt of new buikling that is going on in and aromad the cits can be taken as a chiterion of how The huminese men here look ujon the future !

Nothing so clearly indicates the fait of amor a city-in the belief that the future is bright as a wiblingness (o) invest in new buiddings. A building is it thing of the futule. The return upon the inveatme tht that its owner puts into it must of necessity be spreat oner several years. There is nothing of the "Hy by night" stuft about a new building. It j: peamanent, solid, substantial. I man buide a house to live in, or to enable him to exact paments, from some-one clse for the privilege of living in it, or conducting his lusiness in it. And if the owner did not have fath in the future he would not build the home, because his return must come from the future.
'Ihe amount of buiking that goes on in a town, therefore, is a safe guide in estimating what the pople of that town think of their community as a place in which to live and to conduct their business. 'Ihe amount of building that goes on, in other words, is an index to a community's prosperity, or coming prosperity. When building stops the place is dead.

Tho: whe cherish doubts about shanghai as a business city would do well, therefore, to louk anound and to take note of the tremendens anmont at lonidng that in going on here.

On the Bund-the main street of Shanghaithote is so much building geing on that if a resident of the city were to leave now he would hardly

 Hanglan! and Shunghai Bunk; center: New Building on Tibet Road; lower, New Flowr Mill, Wusith

recognize the place upon returning a year of two hence. The Glen line, Jardine, Matheson and Co., Ltd., The Chartered Bank of India, the Hongkong and Shanghai Bank, the Nissin Kisen Kaisha, and the Dollar building (the latter just off the bund).

What an array that is! And what fine buildings they are to be!

Leaving the bund one cannot travel in any direction without finding a new building in course of construction-some of them nearly finished, others just started, and still others only a little war past the blue print stage. But work is proceeding on all of them as fast as a small army of men can put the concrete and bricks in place.

Outside of the business district large numbers of residences and factories are going up. Not far ont Soochow creeks a great flour mill, described as the largest flour mill in Asia, is practically completed, and this is only one of dozens of smaller buildings that are being put up for business, commercial and manufacturing purposes. In every direction from the municipal building, itself a monumental structure that will stand comparison with any similar building in a city of Shanghai's size the world over, and which is just nearing completion, it is not difficult to see that Shanghai is in the midst of a building boom. In the business dis. trict, new office buildings. In the outlying district, factories, godowns, apartments and re. sidences.

A survey of these new buildings gives the visitor a fceling that Shanghai is permanent, for almost without exception the buildings are of the solid, substantial type. Take the Jardine, Matheson building, for instance. For many months we have seen stone masons priting huge blocks of granite in place in that structure, building a home for that fine company that is as solid as the institution itsenf, and when anyone in the Fast thinks of "Jardines" he subconsciously thinks of the Fank of England and the Rock of Cibmiltar in the sime breath.

The Aincricans have ar reputation the wornd over of being great advertisers, but when one motw the character of that now Jardine, Matheson build ing he wonders if, after all, the Anericalns aro the real advertising experte, for one can'l help thinking that the orgignators of the idea for that bulding hate in the back of their minds (or maybe right up in the front of theif miseds) the impression of solstity that it would give- the idea that the buidding woul. impant to all who looked upon it a conception al the emplany itwelf. Are they buidding : home far their f.lnsmeses and an advedisment for if at ond and the same diane? Whether that is the ir sate ithe: or not, the fact remethe that all the adivertiong experts

## (C'ontinuely on I'age ifi)






## IMOTOR CAR TENDENCIES AS REVEALED AT THIS YEAR'S SHOWS

Manufacturers for the Most Part Conservative, with Only the New Concerns Exhibiting Novelties

NOW TIIAT TIIE 1921 show season is practically over the student of motor car tendencies may ask himself what the shows diselcsed that was new and out of the ordinary:

As expected and predicted by those who are familiat with all phases of the industry, this year's shows did not reveal anythung in the way of a sumprise. It may be that the cause of this lies in the fact that manufacturcrs have not yet got over the war-time upsets sufficiently to turn their minds and energies to the creation and production of new

designs, or again it mas bo attributed to a conviction on the part of the makers that the cars, from a mechanies 1 standpoint, have just about reached perfection and that future ellorts should be confined to refinements ani improvements of detail.

Before discussing, in a detailed way, the "mechanical" side of the shows one can hardly refrain from exulting some. what over what might be called the great "moral victory" achieved by this year's exhibitions. By that it is meant that the shows, to a degree not dreamed of by the promotors, proved that interest in motor cars, far from being on the wane as some of the pessimists predicted when the slump began, is greater than ever, as attested by the fact that atiendance figures were surprising large-larger than ever before. This was cheering indeed to those who were watching the public narrowly to see what sort of a reaction there would be to these avowed invitations to the people to forgot, for the time being at least, that such a thing as an industrial and commercial depression had the well known world in its clammy and unwelcome grip.

The reaction was of a sort to cheer all except the most confirmed pessimists, since never before in the history of motor. car shows, did such crowds tum out to see what the manufacturers had to offer. In a sense these large attendances were a relouke to the manufacturers, for there is $n$, doubt that some of the latter, anticipating that this year's showe would fall @at, did not go to the pains to get up the
best possible exhibits, being content to stand on previors achievements and placing himself in a position to say, in the event of a show frost:" "Well, it doesn't matter much; the public didn't turn out for the shows, but as far as I am concerned they didn't miss a great deal."

This feeling, however, doubtless was more an impres. sion than an expression, and not so pronounced that the exhibitors were of necessity required to do much blushing fcr shame.

The success achieved by the shows is undoubtedly responsible for the perked up feeling that pervaded the industry immediately afterward, and one had only to read the trade papers to see that such a feeling was very apparent. Factories that had been closed down or else working on a very short schedule opened up immediately after the New Jork show, not on full schedule in any cases that we have learned of, but enough to indicate that the managers considered themselves safe in going ahead and getting up momemtum sufficient to make their response to the signal "full steam ahead" instant and effective.

In this respect it was proven once again that the public, more than any other factor, is responsible for the tremendous advances made by the automobile industry. It was alao proven, if any necessity existed for such proof, that the motor car has attained a place in the world as a utility of the first magnitude, for if it were not utility-a means of meet-


Romon chassis lubrication system and installation details-Saxon
ing a great human need-the public interest in it would not continue to be sustained year after year.

From a salos standpoint, too, the shows, particularly the New Lork and Chicago shows, were surprisingly successful, all dealers reporting an interest in the exhibits that was far from the casual interest that could have been expected in view of the stringent period through which the country
was passing at the time. From every show so far held, in all parts of the country, come reports of an extraordinary buying interest, all things considered.

It was because of the buying interest shown that the shows had such revivifying effect on the whole industry


Water outlet from engine is through forvard extension of cylinder head casting-National

They put a vast amount of "kick"' into the men who had all but concluded that there was nothing left for them to do but wait for better times. The shows demonstrated to them that the public had not gone back on the industry, and that it was ep to them to carry on as before. From an engineering standpoint a considerable number of novelties were ex hibited at the two big national shows. This was particularly true of the makers who showed their models, not in the show buildings prorer, but in the nearby hotels at New York and Chicago.

In its new single six the Packard Motor Car Co. has struck a new note with respect to location of engine acces sories. With the constant increase in the number of these


Frame stiffening plate and tire corvier-Stearns
accessories their armagement has become somewhat of is problem. When placed on the sides of the engine botwent the crankase and the frame they not only interfere with access to the engine but often are hard to ged at themselves. In the now Packard the ignition unit is placed contrally on top of the engine and the pump, which is of the water circulation type, together with the fan and themostat form a
unit also located high up in front, so that there are few auxiliaries on the sides of the engine. The control rods from the ignition unit and carbureter are, moreover, very neat!y arranged, running substantially parallel with the engine axis, which makes them unobtrusive and gives a clean cut engine layout.

Th respect to control rod connections many designer's still have much to learn. In a great many cars either the carbureter or the ignition unit is located on the opposite side of the engine from the steering gear, and this requires


Water outlet from cylinder liead (left) and sectional inlet and ertaust manifolds-Oakland
running the control linkage around-or through-the engine. Now that an interconnection between the throttle valve and the pressure relief valve on the lubricating system is provided on many cars, the linkage has become even more complicated than formerly. On one car no less than eleven ball joints were counted, and as these were of the trpo in which the socket is spuen over, which usually gots very loose after two or three years' service, such cars naturally age very rapidly. Of course, it is not a great expense for the owner to put in a complete new set of these ball and sacket joints, but the arerage owner will not take the trouble; though the rattle will annoy him.

Where comections have to be made from the steering geat on one side to anxiliaries on the opposite side of the engine it is often a grod flan to carre a contool shaft righe through the engine. cither throngh the erankease or the


 a number of cars, wotably the 'Tomplat. Whaterer expened
linkages thero are should be arranged in a neat manner, the individual links proferably in the three main planes. The Italians are past masters in the art of neat design, but Mr. Ferghson in the Fergus car has shown that the Tatin

race has no moropoly on the ability to produce simple look. ing and attractive layouts.

Whenever there appears some simple improvement whose advantages are obvious, it is remarkable how quickly it is taken up by designers generally. It is now hardly a year agn that attention was first called to the practice of providing oil cocks with extension handles so that they can be reached without getting down under the chassis, yet at the show these extension handles are found on many cars. There seems to be a tendency to discard the float type of oil gage. In the new Pierce-Arrow, for instance, the oil sump is provided with two try cocks whose stems extend im:


Front connection of rear spring-Paige
through the continuous web of the crankcase into a position where they can be easily reached. As there is no sod pan, the cocks can be easily seen, and as they extend straight out. from the side of the oil pan they can be easily cleaned if they become clogged with dirt. No doubt this method of determining the oil level in the case, while ordinarily not as exact as the float indicator, is on the whole more reliable. It was noticed that the bayonet type of oil gage, which here-
tofore has beon used almost exclusively on truck engines, is rajidly coming into use also on passenger car engines, particularly those of the less expensive type.

Valve enclosure came first in connection with L -head engines. Several years later makers of T-head enginea found that in order to hold their own they also would have to enclose the valves, though, since valve chambers had to be provided on both sides of the engine, this involved a greater increase in weight than in the L-head type. The valve-in-head type with tappet rods extending up one side of the engine resisted longest the general tendency to enclose all working parts, but finally the hour of the exposed long tappet rod has struck too. In certain engines, such


The exhaust pipe placed near the carburetor for a hot air connec-tion-Roamer
as the Weidely, the tappet rods extend up through a charber whos? walls are cast integral with the cylinder bluck which gives generally the neatest construction, but most designers cannot convince themselvcs that the very considerable increase in weight necessitated by this constri:tion is warranted. In the Dorris the rods are enclosed individually in tubes extending between the crankcase and an overnanging portion of the head. This, of course, hides the moving part=, but it does not give that simplicity of outwa: d form which is the aim of many designers. On the Buick


Accessories placed above rather than at the side of the enginePackiard
and several other cars sheet metal covers are secured over the side of the engine on which the tappet rods are located. In the Buick the cylinder block is cast with offsets or sieps
along the vertical center line at both ends, against which the metal cover fits.

The bell housing construction is constantly coming into more general use, among those who have adopted it recently being the Pierce-Arrow Motor Car Co. Although the Pierce retains the separate transmission amidships, it now has an enclosed flywhoel and clutch, and this has eliminated the characteristic Pierce engine suspension by means of two drop forged carriers. At the front the drop forged carrier is retained, but at the rear integral arms extend from the bell housing and rest upon lugs riveted to the frame, the holding down bolts passing through the arms and lugs being provided with coiled springs under their nuts to provide Hexibility.


Fan pulley betind the gear case and the water pump in front, both on the same shaft-Dupont

In reports of the European shows this year attention was called to the growing popularity of continuous webs between the engine crankcase and the chassis frame, and the same tendency is observable here. The sheet metal underpan is always more or less of a nuisance, because of the amount of dirt it will collect and bocause in some cases when parts or tcols drop into it they are hard to get out again. Besides, it slightly reduces the road clearance and

without it the engine cith be set correspondingly lower, which makes for a lower center of gravity. Prantically all of the new high grade cars with vertical engines hate continuous
webs, and where they are not cast integral with the crankcase, filler plates are sometimes bolted between the crankcase and the frame, as in the Fergus.


Combined tire carrier and tank support-Davis
When an overhead valve engine has a corer over the valves; something of a problem is presented by the wateroutlet from the engine jacket. As such covers have been applied only during the last year or two the problem is a relatively new one, and this is reflected by the variety of solutions worked out. Int the Stephens six-eylinder engine, which is relatel to the Moline tractor engine, the valve cover is jackecte? and the outlet header or manifold is cast integral with the


Trathsmisision bratic supmort-Nustle
cover. Ome explatation of this dosign is umbeuhted! that


 theme cond. In the liniek there are (wo small indentationm of the dower on one side where the water return mandiold telle to the cylinder head. In the storipps- Bexpth the whele
countinucid on mate son


The Dristol Pullman Triplane. a British air liner of 14 passenger capacity

THE ETILITY OF ATRCR.AFT as a means of transport has long been apparent to those who are sufficiently interested in the industry to watch closely its ever incrasing and ever in!moving products, an? the policy of securing and permanently maintaining aerial fleots for purely commercial purposes has been advocated from time by many who figure prominently in all that concerns to time aviation.

Popular prejudice and Government apathy have had to be countered at every step, and it says much for the courage and persistence of these pioneers that we have to-day as an accomplished fact Aerial Mails between Fingland and the Continent.

The rapid strides made in the perfection of aircraft during the past ten years, compares favorably with the dovelopment of the railroad and the motor car, whose progress was in like manner impeded by lack of public interest and the well meaning lout futile restrictions impresed upon them by the (iovermment of those ders. When once their general utility was made manifest, howerer, phenomenal progress was made and we have ats a result the speedy and well organised treffic without which, it would seem to-day, scarcely posihle to carry on.

The fact which we think should be insistod upon in the first place, is that aerial transport is not intended to supplant, but rather to erpplement the ruesent modes of transport, and when once this is recognized and proof is adduced of the possil ility of successifully undertaking such work, we feel sure that public support, the lack of which speels ruin to any enterprise, will be fortlacoming, in consequence of which legislation will follow to carry into effect the proposals of those concerned.

In this connection we have seen with interest the results of the Air Ministry's competition for commercial vehicles at Martlesham Hoath, two months having been allotted for the trials which commenced on August-3rd. The craft entered were in three classes: large machines, such as the Handley Page W. 8. capable of carrying 15 jassengers of a load of $1 \frac{1}{4}$ tons at a speed of well over $100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. ; small machines such as the Austin 'Kestrel' two seater, with the remarkably low landing speed of little over $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$., a very useful feature in machines which are likely to be popular for private use when small aerodromes are established generally; and amphibians which although comparatively speaking are newcomers, are of undoubted importance in that they obviate the present day necessity of choosing indirect routes in order to have the shortest time possible over water, thereby entailing considerable loss of time.

It is a regrettable fact that while much space is given to accounts of accidents in flying, very little prominence is given to the every day services that are maintained throughcut Europe, and there is consequently a widespread and deplorable misapprehension of the 'dangers' of flying. Now flying as we know it to-day, is certainly not dangerous, unless we consider crossing ai road or riding a cycle dangerous; and the very small percentage of mishaps that do occur we can reasonably expect to be reduced to the limits of what is usually known as the 'personal equation' in view of the fact that the whole of the energy and experience gained in the past is concentrated on their elimination.

The provision of suitably equipped landing stages throughout every route is of vital importance in order to
avoid the risk incident upon forced landings, and it is to be hoped that in this respect, as in others, there will be little delay on the part of the various Governments in conferring and obtaining authority for their establishment.

The assumption that fog will inevitably suspend aerial services is by no means warranted. Quite apart from the fact that land and sea transport are thereby retarded, it is an established fact that fogs are local and are not known above an altitude of some 700 yards, and with the existence of numerous landing grounds would simply necessitate a passage to one not fog-bound.

Certain it is that those who endeavor to detract from the merits of aircraft do not realize the multiplicity of ways in which it can bo of service. Passenger, mail and goods service are in existence but are capable of greatly extended use, more especially in those countries where communications are difficult, and slow, and liable at times to complete interruption.

In this respect it is well to point out that the air is a more or less unknown quantity at present and a great deal of meteorological research has been and is being conducted in order that aerial highways may be charted and favourable currents taken advantage of to the full. The value of those investigations cannot be over-estimated in view of the large part that wind plays in connection with aerial transits.

We will neglect the sporting and domestic uses of the aeroplane : but have yet to consider another aspect-surveying. The difficulties attached to this work in the past have been in many cases well nigh insurmountable, whilst the facility with which a survey can be conducted from the air should be at once apparent.

What not to do, is even more desirable knowledse in this connection than what to do, as the civil engineer usually knows this latter whilst ignorance of the former gives rise to much waste and misspent energy.

We now come to the question of the cost of running an aerial service, and in this respect it will be well to distinguish between running costs and capital expenditure,
and with regard to the former we would poins cut that Mr. Bert. Hinkler's flight from London 1, Turin, a distance of 620 miles was accomplished in $9 \frac{1}{2}$ hours at an approxinust. cost of 1d. per inile. In general it may be cafely assentel that the running costs are not more than tbose of tlee ordinary car, repairs, costing less, if anything.

The expenditure necessary to circumvent the natural obstacles encountered by the railroad and roadways generally will not be necessary with the air. Further it should be pointed out that there will be no maintenance account in connection therewith.

Thus there is every reason to believe that once civil aviation is placed on a secure foundation by continuous demands upon its services, the charge per passenger can be profitably made less than that required by any other means of transit: and it is no idle boast on the part of the manufacturers to assert that the day is not far distant when the small airplane will be produced at a figure considerably less than the ordinary two seater car whilst freight will be developed to satisfy the most exacting commercial magnate.

Amongst the large airplanes constructed to provide a high speed machine capable of carrying a considerable load of passengers and cargo in addition to fuel for a lengthy flight, the "Bristol Pullman Triplane". is a particularly interesting machine, and one which, on account of its size, and general pleasing appearance, attracted a great deal of public attention at the British Aero Show in July last.

It is a four engined triplane with a single fuselage and with four $410 \mathrm{~h} . \mathrm{p}$. engines fixed in pairs tenderwise driving two tractors and two pushers on either side of the fuselage.

The appointments of the cabin as may be judged from the interior view provide the highest comfort a passenger may desire. The car in which the fourteen passengers, and pilot and engineer are accommodated, is 7 feet in height and is wholly enclosed. A central gangway affords access to the seats which though removable are normally placed on either side of the car. Large windows are provided for the
(Continued on page 68)


Interior view of British triphane cabin-Note the sill curtains, milin! lights und henntimul mondrork

# The Oriental Motor 

Motoring-Motor Cycling-Aviation

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## EDITORIAL

## LET'S GET TOGETHER

The movement looking to the organization of an automobile dealers association in Shanghai does not seem to be making as much headway as some of its promotors hoped, which certainly is unfortunate for the dealers, for the community, and for the motor car industry generally.

There are numerous obstacles in the way of bringing about an organization here, but it ought not to be difficult to overcome them, and the leaders among the traders ought not to rest until they are overcome. They ought not rest, in fact, until all the automotive men in the Far East are united into one association, for it cannot be doubted that such an organization would accomplish a world of good for the whole industry.

The history of the advance of the automotive industry in the home countries is a history of organized effort, and the more the industry grew the greater was the recognized need for organization. Today, the industry is a whole net

Work of organization, running all the way from big, national associations of manufacturers, down to country and town organizations of dealers. These organizations embrace not only the manufacturers and dealers, but other grours associated with them. The engineers are organized. So are the body makers and designers. Salesmen and advertising men have their separate associations, as do parts makers and men who are only indirectly associated with the industry. It is a story of organized effort all along the line and it is safe to say that in England, France and America, to name only three of the manufacturing countries, there are literally hundreds of organizations and societies which heve for their purpose the advancement and improvement of the industry as a whole.

It is perfectly obvious that this tendency to work together has accomplished heretofore and is continuing to accomplish a world of good. It is also obvious that while the men who are engaged in the manufacture and sale of automobiles, trucks, tractors, accessories, etc., are wise enough to see the benefits of organized effort they lose nothing individually by such association, and that competition is just as keen and just as healthy as if everybody were going along on his own individual hook.

There are so many things that could be accomplished here in China and the Far East by a dealers and distributors organization that it would be difficult to enumerate them. First and foremost, the automobile men, if united, could give greater impetus to the good roads movement than any other single force, or more than all other forces combined for that matter.

If the dealers in China were to organize, that fact would immediately align the whole strength of the industry behind them in the effort necessary to be expended before good roads can be built in China. Such an organization would be impressive. It would give "face" to the road movement. It would impart a seriousness to the movement which is now lacking', and it would show that the men who are out to motorize this part of the world mean business.

The good road movement in America has been sponsored practically from the start by men who were closely identified with the automobile industry. Henry B. Joy, of the Lincoln Highway association, and the majority of those who are associated with him in that great highway project are also connected with the automotive industry.

Road building is a selfish proposition: That is to say, nobody is going to interest himself in roads except for selfish reasons. Don't make the mistake of thinking that the word "selfish" is used in any unfavorable sense, or that saying that road building is a selfish proposition is equivalent to saying that those who seek to bring about good roads are of necessity seekers after special privileges.

Road building is selfish in the sense that a man's wholelife is selfish-a worthy and commendable striving for
improvement in his well being. Those who seek better roads, therefore, do so because better roads will bring about an improvement in their well being, and in that way it is a selfish proposition.

Road building, of course, would benefit everybody in China, but it would not benefit everybody directly. Only those who are engaged in the sale of autombiles and trucks would benefit directly, and for that very reason the impetus for the movement should come from them. They should be the most substantial and aggressive force behind the movement. They should provide the real start for the movement, after which other organizations and forces, thus brought to see the benefits of good roads, would rapidly fall in line.

Shanghai is the principal commercial city of China, for which reason the automobile men here should take the initiative in forming an organization. Other cities would follow suit, with the result that before long there would be an organized movement for good roads that would extend into every province.

These truths are so obvious that it ought not to be necessary to present arguments in their behalf. - They are so obvious now, and have been for so long, that it is surprising that there isn't already a thriving and aggressive organization of automotive men here and in other cities of the Far Fast, with a big, general organization embracing all of them, as in the home countries.

Of course, there are difficulties here, growing out of several causes. First, there are different nationalities which present a problem that does not exist at home. It is a good deal like trying to organize a league of nations. Everybody admits the soundness of the principle involyed, but everybody seems to be afraid that somebody else will get more good out of it than he will.

These fears are largely if not wholly imaginary: Imaginary, because it should always be borme in mind that any member of the organization, if he sees fit, has the privjlege of withdrawing. No dealer, therefore, has anything to lose and much to gain. 'At the very worst he could be no worse off than he is now, with the chances altogether in favor of a great improvement for him.

In contemplating an organzation the individual dealer should keep in mind the larger arpects of it. He should reflect that even if he had to make some sacrifiees he would also make gains that would far offset them. The troulse with some men is that they will let a little fear stand in Hes way of a higg advantage. 'They get it into their heads that an organization would accomplish come result fo which they are opposed and for that reason they are agamst it, of at least not as enthosiasticatly for it as they whold be, when, if they would stop to analyer the mbther they would and that the advantages would far ontwerght the sumpered disadsamages.

In the home countries just now there is no end of talk about building up the foreign market and extending. trade to those parts of the world which in the past they have not thought much about. And right there is where a dealers' organization here would be a mighty fine thing. The dealers could speak collectively to the manufacturers on many matters affecting the requirements of foreign trade, and their voice, if they were organized, would have much more effect than it does when they speak as individuals.

How many manufacturers have given a thought to design, or to any mechanical considerations, à applying to the requirements of this market? Not a one of them. They have built up their product to meet domestic needs and demands. As far as they were concerned the foreign field did not exist, and such cars as have been sold here have been more or less of an overflow from the domestic market. At home, before a car is put on the market the engineers. and designers make a special study of the particular conditions to be met and they then strive to meet those conditions. But has anybody ever heard of an automotive engineer coming to China to see for himself just what is needed out here? . It may be said by some that the cars built for home use are quite satisfactory out here. True, but can anybody say that the engineers and designers, if they gave special thought to the subject, might not be able to produce something still more satisfactory?

Before the war the Germans, as everybody admits, were making surprising strides in building ur their foreign trade. And everybody who has studied their methods knows that they did this by making a special, detailed, intensive study of each market. Then they went home and built goods especially for that market, not in the same factories with which they supplied the domestic demands, but in special factories where everything was ordend and arranged for the manufacture of goods for the foreign field.

Contrast this with the methods in rogne in the aremage American or English atutomobile factory, where, in most cases, even the functionaly with the tithe of "expmt manager" has never smelted salt water, to sal mothing of the enginoes and designers who phan and excolle the cats: destined for use in markete thotsable of mil: - trom hamke.

A dealerse' ongazation womblathe bat imlu.anc in
 in which they are chaged, and tho dhanser amd imp ronements would stat at the lactory amd ome in Chanat - highWays, and that, as crembooly will admit, in alene wat whish comects two points that are very widely separated from each other.

 Bow dealer and di-wildere shombt womber that when ha thinks of organzation. If is a trui-m dhat ha:- be:n



# THE MODERN AMERICAN FAMILY CAR-LATEST STYLE 

Battleship Body, Machine Gun Mounted in Turret, and Barbed Wire Cutters are Necessary Equipment


According to the latest reports from America some of the motor car manufacturers are contemplating the manufacture of an automobile that will enable the motorists in that country to cope not with highways, but with highwaymen.

The profession of being a highwayman in America has developed to such a fine state of perfection that the police have proven unequal to the task of suppressing the operations of the bandits, with the result that the citizens in practically every community have organized vigilance committees along the line of those that maintained law and order in the western mining camps in the early days.

These committees, working in conjunction with the police, are resorting to drastic measures to put the robber gangs, most of which use motor cars for their depredations, out of business. And on the principle that the best thing with which to fight fire is more fire they are making use of motor cars in their warfave against these law breakers.

Whether any cars of the type pictured above are actually in use for this purpose, or not, it cannot be gainsaid that they would constitute an ideal weapon for use against the motor highwaymen, particularly in view of the fcat that many brave police officers and other officers of the law have lost their lives while trying to arrest the motor equipped desperadoes.

The criminologists in the United States are having a hard time trying to figure on what is causing the widespread banditry that is now prevalent. Some say it is a reaction from the war-a sort of reluctance of the war spirit to let go. Others attribute it to the widespread unemployment, and in support of their contention there are instances of motor bandits who told their victims, after robbing them, that if they had been provided with decent jobs they would have not turned to outlawry. Still orhers contend that the widespread publicity given to those who pulled off successful "jobs" inspired others to emulate that quick and apparently easy road to fortune.

Whatever the cause or causes, the problem is one of the most acute that law officers in the United States have had to deal with for years, and the fact that the robbers use motor cars to carry on their depredations makes it next to impossible for the police to stop them. There is no way of anticipating them, and so quick is their "get-away." that in most instances there is little or no chance to catch them.

If in doubt about the effect of cold weather on your oil place some in a glass where it will be exposed to the cold. If it thickens so much that it will not readily flow it is not suitable.

The adequate insurance of your Motor Car is of greater importance than the insurance of your House and Furniture. An accident to your Car may not only entail damage to the Car but may involve you in heavy Third Party liabilities.

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# THIS YEAR'S STYLES IN AUTOMOBILE BODY DESIGN 

An Interesting Forecast by one of the Leading Body Engineers

By George. J. Mercer
Nember, Society of Automotive Engineers

GEORGE J. MERCER, consulting body engineer of the Saxon Motor Car Co., Detroit, read a very interesting paper at the recent annual meeting of the Society of Automotive engineers, in New York, in which he outlined the forthcoming styles in body designs. Mr. Mercer's paper should be oî particular interest in Shanghas ior the reason that a great many motoists here have bodies built for their cars in the Shanghai plants that are equipped to do this kind of special work; also it should be of great interest to the technical men here who Irequently are called into consultation by clients who desire to have a special body built along the very latest lines. Mr. Mercer's pape:' follows:

It is not difficult to forecast the immediate future of the trend in automobile body models for large business or quantity production. Special designs vary according to the individual taste of each customer, but quantity business necessitates a design that will please the majority. The design must be a compromise between the old and the new. Its mission is not so much to excite comment as to placate users, because builders doing a universal business are bound to standard practice. I think that builders who produce what is termed a standard body model are not always satisfied with the appearance of their cars. On the contrary, I believe that the majority feel at times the urge to break away from stereotyped lines and produce something more distinctive but, if the volume of business is satisfactory, the most that such an effort will accomplish is some general refinement.

The design of an automobile body is one of the best advertising features of the car. The appearance alone often
will make or mar a car sale. The body not only counts for appearance but, within its scope, it controls the comfort and much of the pleasure of motoring, and to some degree it insures the safety of the passengers. The potential benefits of an attractive body design as a sales booster are well understood; frequently the substitution of snappy uptodate body models will revive the selling force and add new life to the entire manufacturing organization. Provided the mechanical foatures of the car are sensible and correct, such changes are all that is required io produce a larger business.

The number of different body models that will prevail during the coming season is less than in past years. For example, a few seasons ago one manufacturer listed 14 body styles that were in regular production. The greatest number of models listed by one manufacturer during the past year was eight ; the majority listed four and this latter number probably will be the number of difierent models made by most manufacturers in the coming period or, if the touring car is considered, in two divisions, a total of five styles.

The models that will prevail during the coming year are the five-passenger touring car, the two-passenger runabout, the five-passenger sedan and the four-passenger coupe. The seven-passenger touring car and the sevenpassenger sedan will be made in limited numbers ; at times the latter will be built with a division, thus making it a twocompartment car. The touring body, that has remained stationary for as long as regards development, is surely developing into two divisions to meet existing -needs.

The sport model is an offshoot from the standard touringbody design, but manufacturers making both give them distinctive names and list them as individual models. How-


## GREATER TIRE MILEAGE IN GOODYEAR CORDS



Unlike fabric tires goodyear Cords do not bump into obstructions, but rather flow over them, absorbing shocks into their own resilience. The cords and layers adapt themselves to the inequalities of the road.
There is a definite reason for this. It is found in the peculiar oversize construction of Goodyear Cord Tires, a construction originated by Goodyear.
The tire-body is built up from thousands of cords laid in layers diagonally one upon the other without interweave.
Each cord, and each layer is separately insulated and upholstered with a cushion of quick rubber. Each cord and each layer is free to move under strain without contact, without friction.
The resilience which averts body rupture and interior weakness is powerfully backed by the multiplied stoutness of the cords themselves.

Goodyear Cord Tires are made in the Straight-Side type only.


ever, the greater volume of business is still with the larger or five-passerger body. Although the sport model appeals to the minority, it is a very important factor. Its mision has already been shown in clatifying the rumbout prorosition.

There have always been runabout users why wanted a small body with seat room for more than the normal passenger capacity. The runabout logically has a two passenger body and when oo made there is a certain definiteness in its design. The desire for more seat rom brought out combination models in the pant that have been shat-lived, but those who require eeat room fur three or four passenger: are best selved by a close-coupled miniature-type four-door touring body. The runabout will hold its place as a necessary model, but it has been decreasing in numbers during the past two years. 'ille five-passenger body seems to have been a satisfactory substitute for both the larger and the smaller body trpes. The rmabout as made by the different manufacturers today is more miform than formerly and has fewer freakish characteristics. When equipped with the allseasons' top, it is a sensible car for doctors and professional men.

The five-faseenger sedan with four doors has undergone but one change within the past year. This has been the sul, stitution of the straight for the slanting front, which simplifies manufacture and is more practical for small cars. The four-door sedan as we have it to-day comes nearer to meeting with universal approval than any body design that has ever been introduced. It has superseded all other forms of closed body for general use except the coupe, which finds favor because it is a miniature of the four-door sedan. The sedan has been simplified in construction by using belt molding that runs all the way around, and the same condition exists at the drip. These two moldings eliminate the welding of the panel. The drip molding covers the top material edge effectively or at least permits the use of a small corner molding under which the top cloth is finished, without its being cvident.

The soft roof is used extensively. This roof is formed of waterprocf material drawn over padded wooden strips and has been one means of keeping costs down during the period of high prices. Another feature on present-day closed bodies that differs from former practice is that the belt line is higher. Formerly, the window of the side was made as long as could be dropped flush in the door; today this line is carried at least 2 in . higher. The result is that the body locks lewer and the quarter window light dues not project so high above the body line when it is lowered.
'The modern sedan has a four-door body and five-passenger capacity. It has a moderately square appeartnce. The lines are evere, with from 1 to 3 -in. radius at the rear. The roof is moderately thin and has a straight molding line. Moldings are used on the doors. On the sedan moidings are used more than on any otber body. This is done principally to give it a straight-line square effect and for economy in manufacture. On high-priced and specially
designed bodies the use of molding is less conspicuous.
I'l:e favorite coupe has a four-passenger bod $J$. sihis body has had periods of orcillation between the two, hree and four-pasenger sizes, but has finally settled to the fourlas: enger size for quantity production. The smaller sizer of coipe have found favor with doctors and professional inen but, for the majority of users the coupe is used and is expected to do duty in place of the miniature sedan. It ha: the compactners that makes it suitable for shopping and business and, as the fourth seat is of the disappearing type, a comfortable entrance is provided to any seat; in addition, accessible carrying space both inside and at the rear of the body is provided.

The bodics that have been enumerated axe the most representative. They comprise the total of the models that builders of medium-price cars will list and market, because ther meet adoquately the requirements of the avcrage buyer. Individual features naturally will be added to a limited extont, for their advertising value. Some will use the square rear romer ; if it is used it is best sidapted to the coupe and should le mithout molding.

The body lines that will prevail during a coming season aro varial le in their method of development. Specially built cars are the trial horses for developing new body lines. A very important fector and one that has an important influence on quantity production is the misuse of the prevailing style in body lines. This brings about a reaction toward more or less of a resumption of body lines that preceded the prevailing style.

The straight line with angular corners is giving way to moderately rounded surfaces, but the straight effect is simulated. The movement is not reactionary; it is illustrated in Fig. 1, which shows the forward end of the car and the body as far back as the windshield line. The purpose of Fig. 1 is to slow how, with rounded surfaces on the radiator, engine hood and body shroud, the effect is straight through from the body top line. Three points, A, B and C, have been taken for illustration ; the cross-sestional development is shown at 1-1, B-1 and C-1. The center of the radii of these three points is projected to the vertical plane to interecct with the lines $A, B$ and $C$, and through these intcrsections a line F is duam. The line E is parallel with the line D , which is a theoretical line that represents the top of the body side continued to the front. The point is that the metal forming the radiator, hood and shroud has its bending point on the line E . The line E can be slightly above or below the line D but, if it is reasonably near, when the front is painted and shows the light and shadow, it wil appear as if the line D was continued right through to the radiator. It is not presumed that it will be sharp, as would be the case if the metal had a corner, but the appearance to the eye is harmonious.

An additional advantage is that the same hood must be used in production for open and for closed models. With
(Continued on Page 72)


TWENTY-ONE years! At the Grand Central Palace, New York, America's premier automobile show launched its twenty-first year. In a place of honor on the main floor of this historic salon, Auburn likewise launched its twenty-first year.
Through more than two decades of conservative progress, the makers of AUBURN Beauty-SIX have endowed your car with stability and character.
These attributes of permanence likewise mark the very principles which have invested the industry with greatness.
What could be more fitting than the expression of these mutual ideals, coincidentally ?
May we demonstrate?

## THE FRANCO-ASIATIC TRADING CO.

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$\mathbb{A} \mathbb{B U R} \mathbb{N}$ Beauty-SIX

# HAVE THE BANKERS GOT HENRY FORD UP A TREE? 

Automotive C:rcles Buzzing With Talk Concerning the Detroit Manufacturer's Plans for Financing

$\mathrm{H}^{2}$ENRY FORD, as is well known to everybody familiar with the manner in which be has built up his great business, has been much in the news in lecent months on account of what a great many in the trade hive come to rpeak of as his "financial difficulties." Hard as it is to believe that Henry could possibly be pressed for cash, accustomed as we are to hearing of the collosal wealth of that modern Midas, it nevertheless appears to be true that our old friend Hank is finding out at last what a great many have long predicated that he would eventually find out, to wit, that a big business cannot be conducted nowadays without the aid of the banks.

So far Henry has been able to make this well known and fairly well established economic law stand on its hind legs and eat out of his hand. The question now is: will he continue to be able to do this? In a recent newspa?le ${ }^{4}$ art icle Mr. B. C. Forbes, editer of a financial magazine and well known'as an authority on financial and business questions, analyzes Henry's case pretty thorough1y. Like all the others who have attemptgd to solve tha inimitable Henry, Mr. Forbes does not get anywhere in particular. His article, however,-is exceedingiy interesting. It follows:

Henry Ford is the most talked-of business man in Anerica io-duy. Much that isn't so has been printed. We read one diy. for example, that lo is "broke." The next day we are told that "General Motors interests are to take over Ford." One popular story has heen that "the bankers have 'got' Ford and are refusing to finance him." Then Detroit sends out a dispatch that "Ford is being besinged liy benkers who are anxious to supply him with capital." The numerous resignations from the Ford company have prompted stitements that "the Ford organization has gone to pieces." And so on and so on.

Here are the facts as I gathered them: Ford need; financing-in fact must have financing.

The amount he is likely to borrow will probably be nearer $\$ 50,000,000$ than the $\$ 100,000,000$ or $\$ 120,000,000$ generally named.

The running of Ford's business will not be taken over br any financial interests. Reports that a Ners lork banker is to become treasurer are wreng. The next treasurer is to be one of Ford's own organzation.

Instead of no banker being willing to conduct Ford's financing he has been so pestered with bankers and bond houses that he has been compelled to go into hiding. At the moment reports were being printed that "it is understood Henry Ford has gone to "alifornia" the truth is that Mr. Ford was in the strictest seclusion not so very far from the city of Detroit.

Notes (not bonds) are being planned.
When Mr. Ford first sounded out bankers concerning a loan he couldn't believe his ears when they began to tell him what he must do and must not in order to be supplied with capital. He was incensed. He exploded. The very idea of any banker or anybody else on this earth talking to him like that--it was an outrageous insult. He would stand for nobody telling him what he should or should not do conceming any phase of his business. Hadn't he built up th:o hasiness? I'es; and he meant to control it without the slightest interference. For a time all negotiations were emphatically dropped by Ford.

But "needs must when the devil drives." Ford was finding every day that he required money more and more urgently. In this respect Ford's position was and is no different from a vast number of other concerns, except thet in his case he had gone ahead and tied up enormous amounts of cask in face of a business recession which most authorities clearly foresaw.

This is what has led up to the position Ford now finds limelf in.

It cost him upwards of $\$ 100,000,000$ to buy out the Dodge brothers and cther minority stockholders. Of this amount I understand Mr. Ford produced about one-third from his own pocket and, through the Ford Motor Car Company, borrowed $\$ 60,000,000$ on short terms from the Chase National Bank of New York and its associates. This obligation almost immediately began to be partly liquidated from carnings.

During the war Ford prosecuted a huge steel construction development on the River Rouge, southwest of Detroit. Instead of costing a comparatively few miliion dollars, this project ate up million after million with disconcerting rapidity, until the total reached a staggering and embarrassing figure. This constituted another very serious drain Mrun earnings.

Still obsessed with Napoleonic ideas for becoming completely self-contained industrially, Ford bought immense ore lands and timber lands in the northern part of Michigan. And, in crder to have his own transportation facilities, he next purchased the Detrioit, Toledo and Ironton Railroad. This road cost Ford a pretty penny, reputedly between $\$ 15,000,000$ and $\$ 18,000,000$. These expenditures likewise made a hole in Ford's receipts.

On top of all this the Ford Company had, of course, to hand over to the Government 40 percent of its profits in taxes. This will probably run up to not far short of $\$ 100,000,000$ for the two years, 1919 and 1920.
(Contsnued on Pagé_64)

# CILVERTOWN wrote the words, cord tire, into the language of motorists. Then Silvertown performance raised the cord tire itself to its place of fame and honor. 

# Gioodrich <br> Silvertown 

America's First Cond 'Tirle
The B. F. Goodrich Rubber Cio., 39 Kiangse Road, Shanghai

H. S. Honigsberg \& Co. Inc.. Exclusive Distributors for Central and North China Tientsin Shanghai

# ENGINEERS PROMISE GREATER FUEL ECONOMY 

"More Miles per Gallon" the Present Slogan, says Col. Vincent, Retiring President of the Society of Automotive Engineers

In an editorial in the February issue of THE ORIENTAL MOTOR the importance oi higher fuel efficiency for automobiles was emphasizel as one of the greatest needs of the industry, and a condition that must be brought about if the dealers and distributors oi automobiles and motor trucks-the men who are out on the firing lineare to continue in business on a profitable and satisfactory basis.

The statements made in this editorial were fully borne out by Col. Jesse G. Vincent, retiring president of the American Society of Automotive engineers, on the occasion of the valedictory speech to the members of that organization. In his address Col. Vincent said that far higher gasoline mileage would characterize the cars of the future, and this, coming from such a high authority as Col. Vincent, who, it will be recalled, wan co-designer of the famous Liberty motor of war time memory; and who also is vica president in charge of engineering of the Packard company, in Detroit, will strike the average user as goad news indeed Cil. Vincent's addrees follows:

A far higher gasoline mileage for motor cars was predicted by Colonel Jesse G. Vincent at the close of his term? of office as President of the Society of Intomotive Enginecrs "Just as soon as the motoring public is ready to make concessions in the matter of speed and ability to operate con. tinuously on high gear," he said "the manufacturer will turn out cars capable of much higher mileage. The good roads morement also has important bearing on this question. With the construction of more routes which can be comfortably negotiated with smaller cars in contrust to the roads where a heavy car is essential for comfort, the use of light cars will naturally increase. So there is direct relation between the good roads movement and automobile econcma."

Colonel Tincent, in his address, also made an attack on the proposal to impose further taxes on the automobile industry, which he declared is suicidal. He outlined thee handicaps now resting upon the industry, declaring that it. has suffered greatly because the public has failed to realize that the passenger car is no longer a luxury but has becone an economic anset of the highest inmortance. The pro. blems which face the indurtry fiom an engineering standpoint, he said, and which now seriously limit the benefits that should be derived from both automobile and trucks. were roads, fuel and cost.
"The automotive industry todaly finds itself facing pro. blems of the utmost seriouncose and importance. Naturally. no trouble that can anie at this time are so grave as these of the early years of the industry, when in fact the very
life of the industry itself was often at stake. But in the present sitmation not only the gronth and prosperity of the industry but to a greater extent the prosperity and development of the whole comntry depend upon the solution of many problems which are peculiarily within the scope of the Society of Automotive engineers.
"Primarily the acuteness of immediate conditions is not due to these great problems. The industry has suffered seriously and is threatened with further suffering as a result, partly of general conditions which have affected all business, and partly of a serious misunderstanding in regarding to the automotive industry which has arisen in the public mind. This misunderstanding has resulted to a considerable extent in causing the automotive industry inconvenience and distress entirely out of proportion to that suffered by other industries and entirely out of proportion to its just deserts.
"There still remains in the public mind a vague belief that the passenger automobile can truthfully be called a 'pleasure car'-in other words that it is to a large extent a luxury. There even remains in the minds of many the feeling that the automative truck is an expensive form of transportation and should be discouraged. In addition, it should be added that the rapid growth of the industry has caused a certain amount of jealously among other men and also that the demands of the industry have furnished a convenient alibi to purveyors of steel, rubber, woolen, cotton and other materials entering into the production of automobiles when they have failed to make promised deliveries to other industries.
'These beliefs, erroneous as they are, have had a decided effect upon the sentiments both of bankers and of the buying public. Those sentiments are responsible for the effort now being urged before Congress to impose greatly increased taxes upon both cars and trucks.
'It seems impossible that any policy so suicidal to the proiperity of the whole country as well as one so unjust to a great industry, can be adopted. It is surprising that any argument is necessary in regard to the truck. The Government itself has records showing that the Postal Express Lines running over distances up to 248 miles from Maryland into Washington resulted in selling farm products to consumers at something like 43 percent less than the normal market prices. Other statistics show that truck haulage can often produce a saving over rail transportation up to distances around 200 miles. The advantages of truck transportation for shorter distances, especially in cities, have been proved by hundreds of thousands of truck owners.
(Continued on Page 90).

## BUICK



## THE WORLD'S FAYORITECAR

MORE and more the Buick is establishing itself as the most desired of all motor cars among people between the two purse-linesthose who of necessity must get along with something less, and those to whom price is not a consideration *** And that includes nearly everybody * * * As proof of Buick popularity you have only to observe that they outnumber all other cars of their approximate price class on the street \% * * And that is true of every street and road in the world where automobiles are used *** On thousands of streets and roads the Buick outnumbers all cars, big and small, cheap and costly *** First in power, first in durability, first in economy and first in the estimation of motorists everywhere * * * You positively"cannot go wrong on a Buick.


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Motor Car Tendencies as Revealed at this Year's Shows
(Continued from Page 10)
from the colinder head is under the valve cover and the water is led through a pire fitting secured into the side of


Air pump mounting an transmission-Puctiart
the corer at the midalle of its kngth. ()n the National and sereral other engine the luad canting is slighty extended at the front, beyond the reach of the value corer, and the water return pipe holts to this extension. This latter solution is undoubtedly the simplest and neatest, and the oniy reaton for some of the others probably is that the cyliuder head casting: were atready in existence when the problem of covering the valves arose.

White an the subject of water conncctions mention may be makic of rome expedients resorted to in order to get uniform di-trilaution of flow and consequently uniform cooling action. In most cases the pmom is mounted near the front of the ongine, which makes it most convenient to have the waier inlct near the front, and the outlet from the cylinder jacket to the radiator also comes most naturally either at the middle of the head or some point forward thereof. Consequently there is danger of sluggish circulation in the rear jackets, and as it is the hottest cylinder that causes trouble from knocking and faulty lubrication, it is important to take precautions against this eventuality. In the Du Pont car, in which the pump is located in front of the engine and


Tonnceu windshield shown in New York
driven from a forward extension of the accessories shaft, the water inlet connection to the cylinder block is made at

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the font eme lut a pipe extemte thongh the jacket to the rear, and ats the outlet in aloo at the froment the water is enmperled to flow themgh the entire length of the jacket. The ementhat simila amament on the almanime elgine of the lremicre car is well known and was shown to gond advantage in a cint-anser molel at the frand Central Palace. On the engine of the six-cylinder Kissel car, on


Central guide for fubric unicersal joint-Briscoc
the other hand, where the pump is located at the side of the engine forward, the inlet pipe is run along the side of the cylinder block and the water enters the jacket at the rear.

Where the inlet manifolds are jacketed it makes for simplicity and neatness if the inlet to and outlet from the jacket are through ports alongside of the main inlet ports of the manifold. Isi the new Pierce-Inow, water from the engine


Tubular rear cross member and flesilue tank supporl-Templar
cooring sy-tem enters the jackit in this way, and in the Jaferette, cxhaust gats. In connection with manifolds it seems to be a geod plan to hold them in place by means of studs whose muts are outside the plame of the manifolds, as such muts can be screwed in place and removed much more conveniently than nuts passing through lugs or ears cast on the manifold and lying close up against the cylinder
hock. Thorecter, if the nuts press on clamping pieces or bridges between sections of the inlet and exhaust manifolds, as in the Seripps-13ooth (Northway engine), they will not gief so hot and are not so apt to rust tight as if bearing directl! agianst a part of the manifold. On the Fergus chgime the exhanst manifold is held in place by five studs passing through cast-on bosses the whole depth of the manifold, thus bringing the nuts into accessible positions.

Although the hot spot and exliaust jacketed manifolds are con-tantly gaining in favor there are still many engines which merely preheat the air bafore it enters the carbureter and do not apply any exhaust heat to the mixture after it is formed. In some designs the flexible pipe connection between the hot air stove on one side and the carbureter on the other side is inordinately conspicuous. In the new Pierce the hot air is carried right through the cylinder block between crlinders Nos. 3 and 4, and in the Roamer, using the Duecenterg engine, the connection is short and direct,


Braced rear end of frame cTannel-Dorris
as shown by the sketch hererrith, the exhaust and inlet being on the same side of the engine as the carbureter.

At each show in recent years-and the present one is no exception-there have bcen exhibitors who in the course of the jear had changed from splash to force feed lubrication. With this change often goes the adoption of oil pressure control in proportion to throttle opening. This method of lubrication control is in use on the Chalmors and Liberty, the Kissel and stearns among others. On the Stearns car the linkage from the accelerator pedal and throttle lever rod to the throttle valve and oil pressure relief valve is particularly neat, and is sketched herewith.

Restriction of the outlet passage from the engine space has long been a cause of poor cooling of engines, or, perhaps, it would be more correct to say that this was formerly a frequent canse of poor cooling, becauso the fault has often been pointed out and has been remedied on most water cooled cars. One of the improvements in the Holmes air cooled car aims at eliminating this fault. This car has a centrifugal type of fan, forming the flywheel, and as: the

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outlet from this fan is in a radial direction and the space between it and the mud pan and other parts of the enclosure is restricted the circulation of the air has been greatly hampered. By installing what is called an aeroduct (sce sketch) the rate of air circulation at any given engine speed is said to have been practically doubled. This device consists merely of an aluminium casting surrounding the fin flywheel on its circumference, in which are formed a series of air passages which gradually change the direction of the air from perpendicular to parallel the car axis. Holmes has also done away with the rather intricate valve mechanism formerly employed and now uses a plain tappet and rocker motion.

It was noticed that on the high grade cars the uie of steel pressings for the oil pan, gear cover and such parts is scrupulously aroided. From a strictly practical stand-


> Novel methorl of fustening windshield to body
point pressed steel would seem to be as good as aluminium, as the constant pressure of oil will keep it from rusting, and if there is any difference in weight in favor of aluminium it must be very slight. Aluminium, however looks better.
'A feature of interest from a maintenance standpoint was observed on the Mitchell six-cylinder engine, in the form of an eye bolt in the cylinder head casting by which it can be easily removed when necessary. Although this feature is not new with the Nitchell, it doss not seem to have been copied so far. The nearest approach to it in other engines noticed by the writer is in the form of over-hanging lugs at the ends of the head casting which afford a grip when the head is to be removed.

The Oldsmobile eight has the generator mounted centrally in front and driven by belt, the fan being mounted on an extension of the armature shaft. This is similar to the construction used on the Nash. Belt drive of the generator was also noticed on one other car where the fan was not combined with the generator. While there is some objection to a non-positive drive of the generator it must be remembered that the power consumption of the latter is much less than that of the average fan. The average generator delivers not over 20 amperes at about 7 volts, which is equal to. 140 watts, and at 50 percent generator efficiency the pawer required to drive the generator is only slightly more than one-third of a horsepower.

Quite a few designers now place the driving pulley fur the fan belt on the accessories drive shaft behind the gear
housing. This has the advantage that it eliminates one shaft outlet from the gear housing and ono chance for oil leakage. Thermostats are finding additional applications on zutombile engines. Thus on the Fergus engine thero are two serving novel purposes. One is in the form of an aluminium rod inside the hollow overhead camshaft, which as it expands from the growing heat of the engine, engages the friction clutch by which the fan is driven from the camshaft. When the engine is cold the fan does not rotate, or at least not at any speed. The other thermostat, which is


Front cross member on Willys-Knight
of the compound metal strip type, extends down the side of the exhaust pipe and controls the opening of the exhaust bypass through the inlet manifold jacket.

In a class by itself is the small Fiat car which has an engine of probably not much over $2 \frac{1}{2} \mathrm{in}$. bore. This, of course, is a car designed for economical operation, and as low first cost should go with low running expense, some of the features found in the larger Fiats have been eliminated. Thus the fuel, instead of being carried in a rear tank from which there is pressure feed to the carbureter, is contained in a flat tank on the forward side of the dash. With the low consumption of these small engined cars a sufficient supply can be carried in this way, especially since the dashboard and the radiator opposite it are very large as compared with the diminutive engine.


Fin tension adjusting means are sometimes a wrak point. If the cranked support is used and adjustment made by swinging the crank around its stud and then clamping it on same, the tension often loosens quickly owing to irregu:

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laries, such as a heavy lap joint, in the belt. In the Templar, although the fan is supported by a crank, adjustment is made ly a positive device in the form of a pullimed with nut, as shown ly the accompan) ing sketch.

On the Nawne, winith is an new ar baill in springiela, Mass, an outside witer inkl cemeection to the eslinder in eliminated by bolting the pump up againet a water passage in the crankease which communicates with a rerticell passage through the cylinder hook. Tlis. vertical wather passage is at the middle of the longth of the engine.

High lights in the development of chassis design as indicated hy the show exhihits are improved chassis lubrication, greater simplicity, rattle elimination, lightness, increased strength due to the better disposition of materials and greater accessibility of adjustment.

Takell generally, engineers visiting the show are impressed with the cleaner and neater appearance of chassis, particularly in the lower and medium priced field. It is noticeable that a fer of the newer cars in the very highpriced field have almost the same simplicity as the lower priced cars, but being larger and heavier are not so prone to use the Hotchkis: drive and consequently employ torogue members which serve to make the chassis. reem of a little more complicatod construction.

There is a very laudable effort throughout to clean up the detaiis and lighten the chassis. This is lieing accomplished gencrally in cne of timo misa, either through the u-e of very noat drop forgings or by making a part which formerly served one purnse perform the work of two. In many instances these two ideas: are comblined and a. drop forging js made which perhaps acts by th to support the gasoline tank and the spare tire or perform some other dual sertice, thus saving weight.

The outstanding feature of chasisis development, however, is the effort toward the simplification of chassis lubrication from the owner:s standpoint. There is not a mant-


Arealeralon prial with seioral rromita umd connections-Stearns
facturer who does nct renlize that vigorons steps are necessary on this part of chassis design to bring it up to a par with other parts of the car. The result is that on practically eveiy chassis at the show some improvement in this respect is noticeable. There are probably fifty or more makes of cars shown with the . Hemite system, a great many having adopted this oil-gin method during the year. The Sazon
car is shown with the Romon antomatic chassis lubricator as standard equipment.

This system provides centralized lubrication for the entire chascis. In the Saxon installation the box-like reservoir is m:ounted on the steering column just behind the dash. The derice is operated by periodically (about onee ever $5(0$ miles) socking a lever which works on a ratchet

rotating the camshafts incide the reservoir. These in turn drive a series of pumps which are connected to the copper leads which run to all parts of the chassis. The pumps are plunger type and are depressed by the cams and return to normal position by means of springs. The oil is forced against a ball check in the intake and through a delivery rassage into cil lines leading to the vatious points on the chassis which require lubrication. Ball checks are also located at these points so that the oil forced to these points renains tlece and also remains in the line ketween the roscrvior and the boarings, insuring immediate movement of the oil on creration of the pump.

To tike care of the various steering, siring and axle points a number of a standard character are employed. The grstem diglacce: all lee grase and oil cups on the chassis, the nill lieing lead dire to these points by the copper tubing ord ly ficxible tuking connections to parts which have nation relative to the chassis frame. There are also special swirel connections at necessary points so that none of the tubing is mader stross due to the oscillation of the springs, movement of the steering gear, etc.

While the abore mentioned cars offer some good examples of the solution of the chassis lubrication problem, there are some bad examples which may be jistly criticized. There are some grease and oil cups still located at points where it is doubtful if even a vigilant owner would find them. After he had found them he would have to distegard the necessity of soiling his clothing and suffiering great inconvenience in order to get the lubricant to the points in question. Probably the location which is the greatest offender is inside the brake drum where some axle manufacturers still place the grease cup which takes care of the rear wheel bearing. Even on the

[^67]

QUIETNESS is a quality which contributes much to motoring satisfaction. Owners like a quiet motor and a car that is as free as possible from rattles and squeaks. This is undoubtedly one reason for the popularity of the Nash Six wherever it is in service.

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# DEATH OF HORACE DODGE ENDS MOTOR ROMANCE 

## Rise of the two Brothers from Obscurity to Affluence Constitutes Remarkable Story

Romance has entwined itself with the life history and fortunes of the two Dodge brothers, and the romance has now been ended by the death of the second of the brothers, Horace E. Dodge, which occurred on December 9th within a few weeks of a sear of the death of his bother, John F . Dodge, who passed away on January 16th, 1920. Both brothers were stricken with influenza while attending the New lork tutomobile show, and Horace never really regained his strength after the attack

It is necessary to go back to the beginning of the twentieth century to trace the star of the successful career of the Dodge brothers. At that time they were manufacturing automolile parts in a murky works with a small plant, the extent and capacity of which may be judged from the fact that they only employed eleven men!

Originally, the brothers went to Detroit and worked for the Murphy Engine Co. at $\$ 18$ a week in 1894. They showed ability, which was recognized by Fred S. Evans, a Detroit manufacturer, and when the brothers invented the first ball bearing bicycle, Evans joined them in the Evans and Dodge Bicycle Co.

At about the time when the brothers were working industriously in their modest workshop, making motor parts, Henry Ford was formulating his plans for the production of a cheap, popular, and universal car, and they had only been carrying on their work for a short time when Mr. Ford became interested in them, and made arrangements whereby they were to take a $\$ 5,000$ interest in the Ford automobile plant.

From this point, hard work, sterling ability, and romance went hand in hand along the path of success with the Dodge brothers, and in July, 1919, they sold their 5,000 dollar interest to Henry Ford for $\$ 27,000,000$.

When Henry Ford organized the Ford Motor Co. in 1902, he persuaded the Dodge brothers to engage in the manufacture of engines, transmissions, and steering gear, and as the Ford business increased they were compelled to add to their plant, until at the time they left it in 1910 it was the best-equipped machine shop in Detroit.

While perfecting his engine, Ford met with many difficulties, and frequently consulted the Dodge brothers to whom must undoubtedly be given much of the credit of the success of the Ford engine.

A short time after they had invested their $\$ 5,000$, the brothers bought the Ford stock owned by A. Y. Malcomson for $\$ 175,000$, the latter having paid $\$ 25,000$ for it.

When Ford capital was increased to $\$ 2,000,000$ in 1908, the Dodge brothers each received 1,000 shares of $\$ 100$ par value.

When the Dodges enjoined Ford from turning profits back into the business, evidence showed their holdings to
be worth $\$ 36,000,000$, beside which they had received $4.5,500,000$ in dividends ; and when Ford purchased the minority interests in his company in 1919, the brothers received $\$ 27,000,000$ for their shares, and, in addition to this, took their share of the 1916 profits.

When disagreement arose between the Dodge brothers and Ford, the former anticipated hard times approaching, and with the Dodge plant operating almost exclusively on Ford productions, they feared inability to weather the storm in the event of the Ford Co. meeting with difficulties, and desired Ford to absorb their plant.

The latter delayed the issue a whole year, and friction increased until what they declared to be Ford's efforts to pare the profits of Dodge brothers resulted in their determination to enter the field of automobile manufacture.

They notified the Ford Co. that it must make its own engines, transmissions, and other parts, and the Dodge brothers commenced active operations for manufacturing cars in 1910 on the $\$ 1,000,000$ plant now occupied, completion of which required more than two years. Production of Dodge cars began in 1914, the brothers in that year finally severing connection with the Ford Co. The Dodge plant rose to fourtle place in 1917, and now is probably second only to Ford, normal output being 625 cars per day.

The phenomenal growth of the Dodge concern is shown in the fact that the plant now represents an investment of $\$ 20,000,000$ the building covering 75 acres.

During the war Dodge Bros. built a munitions plant at a cost of $\$ 10,000,000$ dollars, covering 11 acres and employing 8,000 men. This plant was pronounced to be the finest in the country.

And now the death of the second of the brothers has ended this romance of industry, and it is said that certain New York financial interests which have long sought to obtain control of the Dodge Bros. Motor Car Co. are renewing their efforts.

It is interesting to note, in closing this chapter of romance in the motor industry, that the chief pall-bearer at the funeral was Henry Ford.

## INDIA IMPORTS MANY CARS

According to the Department of Statistics of India, 1,041 motor cars were imported into British India during September, 1920, and of them no fewer than 723 cars were consigned from the United States, only. 247 being received from the United Kingdom. During the six months, April to September, 1920 the number of motor cars imported was 7,498 , valued at $15,000,000$ gold dollars Bombay imported 2,775 cars Bengal 2,694, Madras 908, Sind 590 and Burma ล31.


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# PROPER TIRE SIZE IS IMPORTANT QUESTION FOR MOTORISTS 

"Undertiring" Causes Endless Trouble, Heavy Replacement and Repair Expenses

MANI motor users, perhaps not unnaturally, are somewhat chary of taking the advice that is given to them by the manufacturers of their cars or its accessories. They may feel that such advice is given them in the manufacturer's own interests rather than in theirs, and that the former may benefit most by piling " costs, whereas the latter certainly desire to keep them down.

Undoubtedly it must be admitted that at times some manufacturers have given misleading advice. This criticism applies, however, mainly to advice in the nature of estimates as to the cost of oprating a rehicle under giren circumstances. The manufacturer, in his desire to obtain an order, may be inclined to put the cost unduly low, with the consequence that later on the user is thoroughly disappointed with the results that he abtains. The policy of under-estimating costs is a bad one and fortunately it is by no means generally adopted by British manufacturers.

For instance, the present tendency of the British maker of commercial vehicles is rather to give an outside estimate. When this is done and the results actually secured are bletter than those estimated the user is pleased and is inclined to place further orders in the same quarter.

The present object of discussing this question of the reliability of manufacturers' advice is to conclude as to what value should be attached to it when it bears upon the subject of the proper size of tires to fit a given vehicle. In this matter it will sometimes be found that the advice of the tire manufacturer is not identical with that of the chassis manufacturer. The reason is that their points of view are different. The sole consideration of the tire manufacturer is to obtain results good enough to ensure that the user will come back to him when he requires tire replacements.

The establishment of goodwill leading to big business in replacements is a far more important matter than the making of unnecessarily large immediate profits. The latter is an unfavorable business involving the constant loss of goodwill. It would, therefore, be extremely had policy of the tire manufacturer to recommend the use of laxge section tires, costing more in the first instance than those of smaller section, unless these large seetion tires helped to secure results so favorable in respect of tire economy as to ensure repeat orders.

Stating the same fact from the opposite standpoint, it would be highly improvident for the manufacturer to recommend the use of tires, however cheap and, therefore, attractive in the first instance, if the section of those tires were inadequate to give long and satisfactory service, with the consequence that their use caused dissatisfaction and the transference of future business to some other manufacturer.

As already mentioned, the position of the vehicle manufacturer in this respect is rather different. He is, of course, also concerned in keeping down operating costs, but he is not held so directly responsible if it is in respect of tires and not other items that those costs are high. On the other hand, he is being perpetually urged to keep down the total cost of his complete vehicles to the lowest possible figure.

Many motor users and even traders do not realise to what an extent in the long run operating costs become more important than first costs. They are inclined to look at the immediate present and to put a fixed maximum limit on the price they will pay for the complete vehicle, forgetting that by doing so they are quite likely to be involving themselves in very heavy operating costs later on. Thus the vehicle manufacturer is strongly tempted to fit the smallest section of tire that is at all likely to give decent service. He knows what will probably happen when he does so. The tires will wear out rapidly and the user will be dissatisfied with them.

In other respects the vehicle will, we assume, prove satisfactory. If the user writes to the vehicle manufacturer for advice, telling him these facts, the reply will probably be a suggestion that he should fit tires of a larger section. If he does this and subsequent results are satisfactory, there is no permanent loss of goodwill to the vehicle manufacturer. At the same time, the user never quite gets over his bad exrerience of his first set of Such-and-Such tire. Probably when he gets his second and larger set he goes to another manufacturer for them.

To sum the matter up, undertiring is bad for the user, for the manufacturer, and for the chassis manufacturer. It is worst of all, perhaps, for the user, because in his case the consequence is that he begins to lose money almost immediately and loses it steadily until he mends his ways. It is bad enough for the tire manufacturer. It does not seriously affect his pocket at the moment, and it is conceivable that for a time it may actually bring increased business to him.

The point in this connection is, of course, that the unduly small tires wear out with undue rapidity and replacements become necessary. The user, if he be long suffering and somewhat unintelligent, may go back to the same manufacturer two or three times for another set of tires of the some size. Up to a point, the principle is the same as that of certain motor traders, of whom one has heard, who have deliberately taken up the agency of some cheap and shoddy foreign car because of the enormous business that it brought to them in the shape of replacements owing to frequent breakage. Such a policy may be all very well for a man who means to make a little money quick and

# THE ADVENTURES OF GASOLINE GUS AND KOO, THE COURTEOUS COOLIE 

BY CASTLEFIELD


(:)

## INTERESTING EXHIBITS AT THE SCOTTISH SHOW

Truck Makers Show New Body and Chassis Designs in Passenger Buses

It wouk be superfnous to devote splace to a complete review of the exhibite at the recent admirable exhibition at (ilasorw, becane for the most part the vehicies shown were of similar trpes to those exhilited at the olrmpiat private car and commercial vehicle shows.

Among the new-comers is the Whatwo: 4-tomner, built at Newcastle. This is a strong, substantial chassis. A thermo-sphon cooling system is provided, althongh a punp is fiticd. The drive to the rear axle is through a double reduction gear.

To tuin to one of the oldest-established Scottish firms, the Aibion Company showed a sample of the type of truck of which some 6,000 were delivered by the firm to the War Department during the war. In addition to this 3-tonner, the new Oo-h.p. Qucwt. model which attractod such favorable attention at Olympia was exhibited, one chassis of this type being fitted with a 15 -seated char-a-banc body. A ploint worth noticing is that mileage recorders are now fitted as standard on all Albion vehicles. The use of such a fitting is obvious to any motor owner who desires to keep proper records from which to gauge the periormance of his vehicles.

Ancther high-grade Scottish exhibit was that of the Halley. This well-known chassis exhibited in conjunction with a tipping wagon body, operated by hydraulic gear. It was also shown under a thoroughly modern char-a-banc body, its 6 -cylinder engine rendering it particularly suitable for high-class passenger services. This body, by the way, was fitted with a spacious luggage compartment, this being a provision that is too often negelected in these days of long char-a-banc tours.

Set another interesting exhilit if foottis]: origin was that of the Caledon. Here we saw a 25 -h.p. chassis suitaile for $30 c w t$. loads or for passenger bodies providing accnmmodation for about fifteen people. I'his like the 40-h.p. Caledon, is a worm-driven vehicle. The more powerful chassis was shown under a single-deck omnibus body, providing accommodation for no fewer than 40 passengers and mounted on pneumatic tires. In addition, there was a 4-ton iipping wagon which, like the 'bus, takes ite power from a 40 -h.p. single-sleeve valve engine.

Anoong English firms showing their interest in thee Scottish market by exhibits at Glasgow were the makers of the A.E.C., Austin, Beardmore, Commer Car, Daimler, Denris, Guy, Hallford, Karrier, Leyland, Mandslay, Taliachium, Star. Thornycroft. Tilling-Stevens, and Tulcan. Some of these were shown by the manufacturers themselves, but others figured on one or more of the stands occupied by large Scottish distributors.

The exhibits of private cars were noteworthy as illustrating the admirable class of work done by the principal Scottish coachbuilders. To take one of many examples, mention may be made of the four-seated polished aluminium
bedy built by Messrs. Claud Hamilton, of Aberdeen, for a 1 is.h.j. Sumberm chassis. The makers of this body aloo showed in interesting newcomer to the ranks of light car, in the shape of the 10.5-h.p. Galloway. This is a chassis which is designed for regular every day service as distinct from the iyple of light-car that aims at being essentially a high-syecd super-rfficient sporting vehicle. It was shown with a very attractive coupe body.

Among Scottish-built cars that are already well known and that figured prominently in the show were the Argyll and the Arrol-Johnstion. The former is, at present-day standards a moderate-priced car of the good-class generalutility type. Its engine, rated at 15.9-h.p., in fact develcps about 36-h.p. on the brake. It has four cylinders, pump circulation, forced feed lubrication, and magneto ignition. It drives through an enclosed propeller shaft and helical gear to a flcating back axle. The rear axle is carried on cantilever springs, and the brakes operate direct on the rear wheels.

The Arrol-Johnston is another well-proved machine in solaewhat the same catogory. It may, in fact, be classified as strictly moderate priced, taking prosent circumstances into account. Its 4 -cylinder engine is rated at 15.9 -h.p., and develup, 4 -b.h.p. It has thermo-syphon circulation and forced lubrication. The final drive is through an enclosed propeller shaft and spiral bevel gear to a semi-fleating back axle, curricd on three-quarter elliptic springs. The car is certainly one which should appeal strongly in the oversea markets.

## MAKERS AND DEALERS TO CO-OPERATE.

First steps in a broad program of co-openation between manufacturers and dealers in the automobile industry were taken at the regalar meeting of directors of the American Automobile Chamber of Commerce. This is to take the form of a committee having for its special function the joint study with a similar committee from the National Automobile Dealer's' Association of problems of a mutual nature. The whole matter of the relation of the dealer and his factory is to be gone over carefully, not so much in the light of particular dealers and particular lines, as in the guise of a search for whatever may promise to make for a permanent and profitable relation for both.

Prelininary reports of shipments during January showed that carioad lote went forward from the factories at about 35 percent of the rate established in the same month of 1920.

With confidence that the work which it has laid out for itself is destined to become more valuable and important to the industry as a whole, the Motor Truck Committee of the Chamber held its own separate meeting. The large part of the program consisted in a careful canvass of present conditions throughout the country and a general formulating of plans for 1921.


She: "If you'd taken the car to Ryton when I told you to we wouldn't have been stuck here like this"

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Sole Agents

Renault Car and Trucks.
Michelin Tyres, Straight Side and Clincher Types.

## CHINA LEADS AS ORIENTAL CUSTOMER FOR AMERICAN GOODS

## Volume of Imports Increases Five Fold in Very Few Years

It was not, however, until after the armistice of November, 1918, and the swing into 1919, United States-Chinese trade figures disclosed the stimulus the war had imparted to both China's purchasing and selling ability. Imports from China in 1919 exceeded the total for any four-year period down to 1914, inclusive, the year of the final establishment of the Chinese Republic. Imports for nine months of 1920 exceeded by $\$ 15,756,481$ the total for the whole twelve months of 1919.

Exports in 1919 were double those of 1918, and more than three times as large as in 1916. An even larger absolute gain was made in the first nine months of 1920.

In August, 1920, we imported from China raw silk, $\$ 4,869,000$; goatskins, $\$ 2,019,000$ : undressed furs, $\$ 1,134$,000 ; tea, $\$ 892,000$, hat straw, $\$ 498,000$, and cotton, $\$ 396,000$, which with a little wool, hides and tin, form China's leading developed exports to us. To give to China a purchase power adequate to her most pressing immediate needs, capital for the development of her own raw material export resources is now her great pressing need. Her American trade balances are at once absorbed by her domestic requirements.

## SOME PRICE CUTS ANNOUNCED BY BRITISH MANUFACTURERS.

While the prices of some makes of motor vehicle show no signs of reductiin, others have been heavily cut during the last few weeks. The recent Scottish show was almost as noteworthy in this respect as was the Olympia show of 1919 in respect of the increases in prices then announced. Some few of the recent reductions may be fairly attributed to increased output and consequent lowering of costs of production. More often, however, a big drop in price is merely a public acknowledgment of the known fact that practically all manufacturers have amassed considerable stocks and are comparatively short of ready money. Some few are willing to sell temporarily at almost any price rather than not sell at all.

Thus the reductions are in many cases quite abnormal, and prospective buyers would do well not to regard them as an indication of any general and permanent drop, which is commercially impossible unless expenditure on labor and material can be considerably reduced.

This is not a case in which manufacturers have been taking enormous profits and are now compelled by competition to put a limit to their greed. In some instances, at least, it is practically certain that vehicles are being sold at prices which represent a dead loss to their makers, this policy being necessary for a brief period in order to provide the requisite cash for continued operation. The actual factors vary in every case, and it is impossible to generalise.


# AMERICAN SPECIFICATIONS AND PRICES 

American Prices remain stable. This list inclules the latest anamoncements resivel up to March 15. Pricos quoted are in gold





ACH (6.3x.
ALLEN
Series $434 \cdot 3 \frac{1}{2} \times 5$ Conn A-Lite 110 32x 4 SS $1.595 \$ 1.50 .5$
ALSACE
AMERICAN
 ANDERSOS

 8.20 8.-3

AUBURN ${ }^{\frac{1}{3} \cdot 3_{4}^{3} \times 5 \frac{1}{8}}$ Eismann
6:39.HAK 6
AUSTIN
1)EGGS

BELL
6-3.3x42 Conn A-Lite $120 \quad 33 \times 4$ SS ...... 21.50

BOLR-DAVIS
 BEADLEY
BREWSTET $4 \frac{1}{2} x .5$ Conn Wisths 116 33x4 ... ..... 1370
BRISCOE ${ }^{4-4 \times 5 \frac{1}{2}}$ Berling USL $12531 \times 4 \frac{1}{2}$ SS ..... 7400
$1920 \quad 4-33 \times 5$ Conn A-Lite 109 30x4 QD $1285 \quad 1285$
EUICK
 CADILLAC

CHEVROLET
Lite $102 \quad 30 \times 3 .+\quad 795 \quad 820 \quad \ldots \ldots$. §1375

CLEVELAND

 870 8 8.3

C-53 6-32x5\} Wagner Wagner $125 \quad 32 \mathrm{x} 4$ SS
COMMONIVEALTH
4-40 4 312 $\times 5$ A.Kent Dyneto 117 32x4 $\operatorname{SS}$...... $1595+1785 \quad 246.5$
CRAIG-HUNT


CUNNINGHAM
53-A 8-33x.5 Delco Wisths 132 3.5.5 SS 17.500
6700
DANIELS $\stackrel{2}{8}$
-3tx35 A.Kent Own $90 \quad 26 \times 3 \quad$... 42.5
D-19 8
DAVIS
$51 \quad 6.31 \times 4 \frac{1}{2}$ Delcu Delco $120 \quad 33 \times 4$ SS ..... $189.5121 .50 \quad 279.5$
DISPATCHI

DIXIE FLYER $4-3 \nmid x 5$
BROTIM

Dyneto 112 $32 x t$ S3 $1570 \quad 1595$
2.570

DODGE BROTIIERS
$\begin{array}{lllllllll}6.80 & 4-35 \times 4 \frac{1}{2} & \text { N.E. Ň.E. } & 114 & 32 \times 3\} & \text { SS } & 1235 & 1235 & \ldots . . . \\ 2100\end{array}$
$\begin{array}{lllllllll}6-80 & 6-4 & \times 5 & \text { Bosch Wsths } 132 & 33 \times 5 & \text { SS } \ldots \ldots . & +4750 & 4750 & 5720\end{array}$

$+4000$


## DUESENBE'A(

ECONOMY ${ }^{8.2 \uparrow x 5}$ Delea Delco 131 31x4\} SS
$6-46 \quad 6.31 \times 4 \frac{1}{2}$ Conn A-Lite 115 33xt $\quad$ SS $\$+1835$ \$1895 ....... $\$ 2475$ ELCAR
$\begin{array}{llllllllll}4 & 4-3 \frac{1}{2} x 5 & \text { Delco } & \text { Delco } & 116 & 33 \times 1 & \text { SS } & \text { +149.5 } & 149.5 & \ldots . . \\ 6 & 6-3195\end{array}$ ELGIN
6-K 6-38x4 14 Wagner Wagner 118 33x4 QD ...... 1775 $\$+189.52685$ ESSEX
FERRIS ${ }^{4-3 \frac{3}{8} \times 5}$ Delco Delco $108 \frac{1}{2} 32 \times 4$ SS 1595 1595 ...... 2450

 FRANKLIN
$\begin{array}{lllllllll}9 B & 6-3 \frac{1}{4} \times 4 & \text { A. Kent Dyneto } 115 & 32 \times 4 & \text { SS } & 2500 & 2500 & \dagger 2700 & 3600\end{array}$ GARDNER

6-40 6-31 $\times 5$ Wsths Wsths 119 32x4 $\operatorname{SS}+16951695$
GRANT
$\begin{array}{lllllllll}\text { HX } & 6-3 \frac{1}{3} \times 4 \frac{1}{4} & \text { A.Kent Bijur } & 116 & 32 \times 4 & \text { SS } & 1550 & 1550 & \ldots . . . \\ 2150\end{array}$ H.-C.-S. $4-35 \times 5 \frac{1}{2} \times 1$ Delco Delco $120 \quad 32 \times 4 \frac{1}{2}$ SS 2925 †2975

Halladay
 HANDLEY-KNIGIIT
$4-4 \frac{1}{8} \times 4 \frac{1}{2}$ Conn A-Lite 125 32x4 $\frac{1}{2}$ SS ...... ...... 2985
HANSON ${ }^{4}$
$54 \quad 6-3 \frac{3}{4} \times \frac{1}{2}$ Delco Delco $121 \quad 32 \times 4$ SS 2365 236.5 ...... 2385 A-1 $\quad 4-3 \frac{1}{4} \times 5 \frac{3}{4}$ A. Kent Remy 106 30x3 $\frac{1}{2}$... +1095995
$424.34 \times 5$ Conn Dyneto 115 32x4 SS ...... $1695+16952595$ ${ }_{45}{ }_{45} \quad 6-3 \frac{1}{2} \times 5 \quad$ KingstonL-N $\quad 132 \quad 34 \times 4 \frac{1}{2}$ SS +3185
$46 \quad 12-2 \frac{3}{4} \mathrm{x} 5 \quad$ Delco L-N $132 \quad 34 \times 4 \frac{1}{2}$ SS $4200+3635$
HOLLIER
206-B $\quad 6-3 \frac{3}{4} \times 4 \frac{1}{2}$ Remy Wsths $120 \quad 33 \times 4$ SS $\dagger 19851985$
HOLMES
$1 \quad{ }^{6}-3 \frac{1}{2} \times 4 \frac{1}{4}$ Holmes Dyneto $126 \quad 34 \times 4 \frac{1}{2}$ SS $\quad$...... $\dagger 3050 \quad 31004000$
 HUFFMAN

6-3łx4 $\frac{4}{2}$ Conn Dyneto $120 \quad 32 \times 4$ SS 1995 1995 ...... ...... HUPMOBILE

| R-3 | $4-3 \frac{1}{4} \times 5 \frac{1}{2}$ | A.Kent Wsths | 112 | $32 x 4$ | SS | 1686 | 1685 | $\ldots . .$. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | JONES $6-3 \frac{1}{4} \times 4 \frac{1}{2}$ Remy A-Lite $121 \quad 33 \times 4$ SS $\ldots \ldots$. $\begin{array}{llllllllll}6-28 & 6-3 \frac{1}{2} \times 5 \frac{1}{\ddagger} & \text { A-Lite } & \text { A-Lite } & 126 & 34 \times 4 & \text { QD } & 2750 & 2750 & 2750\end{array}$ JORDAN

$\begin{array}{lllllllll}\text { F } & 6-3 \frac{1}{2} \times 5 \frac{1}{4} \\ \text { D } & \text { Delco Bijur } & 127 & 32 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & & 2875 & 3700\end{array}$ KELSEY ${ }^{6}$
6-37x性 A.Kent Bijur 116 ...... ... $1750 \quad 1800$...... 2700
$\underset{H}{\text { H }}$ KISSEL KAR
Custom Built $6-5 \frac{1}{16} \times 5 \frac{1}{2}$ Remy Remy $124 \quad 32 \times 4 \frac{1}{2}$ SS $3475+3475 \quad 3475+3975$ KLINE
$6-555-J \quad 6-3 \frac{1}{2} \times 4 \frac{1}{2}$ Conn Wagner $121 \quad 33 \times 4$ SS $2290 \quad 2290 \quad$...... 3290
128 ...... ... 1485
$8-3 \frac{1}{3} \times 5$
LAFAYETTE
LEACH
$8-31 \times 5 \frac{1}{4}$ Delco Delco $132 \quad 33 \times 5$ SS $5625 \quad 5625$...... 7400

T 6-3菈 $\times 4 \frac{1}{2}$ Conn G\&D 128 32x 4 SS ...... ...... 238542.50 LIBERTY
$\begin{array}{lllllll}10-C & \left.6-3 \frac{7}{2} x 4\right\} \\ 10 & \text { A.Kent Wagner } 117 & 32 x t & \text { SS } & 1795 & 1795 & \dagger 1835\end{array} 28.50$ LINCOLN

8-33²x Delco Delco 130 33×5 $\quad$ SS $\ddagger 4500$ LOCOMOBILE
$48 \quad 6-4 \frac{1}{2} \times 5 \frac{1}{2}$ Berling Wsths $14235 \times 5 \quad$ SS 77650 ...... 755010000
McFARLAN ${ }^{4-3 \times 5} \times 5$ Conn Wsths 114 32x4 SS ...... 1575
$\begin{array}{lllllllllll}127 & 6-4 \frac{1}{2} x 6 & \text { Wsths } & \text { Wsths } & 140 & 35 \times 5 & \text { SS } & 6300 & +6300 & 6300 & 7500\end{array}$
$\begin{array}{lllllll}\text { MADISON } \\ 6-3 \frac{3}{8} \times 5 & \text { A.Kent Remy } & 115 & 33 \times 4 & \text { SS } & \text {...... } 1550\end{array}$
B $\quad 6-3 \frac{1}{8} \times 4 \frac{1}{4}$ A.Kent Bijur 116 32xt $\operatorname{SS} 15751575$...... 2395

## MANEXAL

MARMON $\quad \begin{array}{lllll}2-3 \frac{1}{2} \times 35 \\ 8 & \text { A. Kent } & \ldots . . . & 102 & 28 \times 3 \\ \text { C } & \$ 47 .\end{array}$
$34 \quad 6-3 \frac{3}{4} \times 5 \frac{1}{8}$ Delco De!co $136 \quad 32 \times 4 \frac{1}{2}$ SS $+5000 \$ 5000 \quad \$ 5000 \$ 6600$ MAXWELL
${ }_{25}^{25} 4-3{ }^{4} \times 4 \frac{1}{2}$ A.Kent Simms $109 \quad 30 \times 3 \frac{1}{2}$ C $\quad 99.5 \quad 995$ MERCER
$544-3 \frac{3}{4} \times 6 \frac{3}{4}$ Berling Wsths $132 \quad 32 \times 4 \frac{7}{2}$ SS $3675+3950^{*} 3950$ METZ
Master, $66-3 \frac{1}{8} \times 5$ Conn Wsths $120 \quad 32 \times 4$ SS $\ddagger+1995 \quad 1995$...... 2895

$\begin{array}{lllllllll}\text { MITCHELL } \\ \text { M. } 40 & 6-37 \times 5 & \text { Remy } & \text { Remy } & 120 & 33 \times 4 & \text { SS }\end{array}+1750$ | E 40 | $6-3 \times 3 \times 5$ | Remy | Remy | 120 | $33 \times 4$ | SS | $\ddagger 1750$ | 1750 | $\ldots .$. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| E-42 | $6-3 \frac{1}{2} \times 5$ | Remy | Remy | 127 | $34 \times 4 \frac{1}{2}$ | SS | $\ldots \ldots$. | $\ldots .$. | $\ldots .$. | MOLLER

$4-23 \times 4$ Eisman Dyneto $100 \quad 28 \times 3$... $1100 \dagger 1150$
MONITOR
6-314x42 Dyneto ...... $121 \quad 33 \times 4 \quad$... $2475 \quad 2475 \quad 3475$
$\begin{array}{lllllllll}\text { F. } 9 & 4-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Conn } & \text { A-Lite } & 115 & 32 \times 3 \frac{1}{2} & \text { SS } & 1440 & 1440\end{array}$ MOON

$\begin{array}{lllllllllll}6-48 & 6-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Delco } & \text { Delco } & 118 & 32 \times 4 & \text { SS } & 2085 & 1985 & \ldots . . . & 2985\end{array}$ | $6-68$ | $6-3 \frac{1}{2} \times 5{ }^{2}$ | Delco | Delco | 122 | $35 \times 5$ | SS | 2585 | $\ldots . .$. | 2485 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | MOORE

F
NASH
681
NASH
$4-3 \times 5$ Conn A-Lite 108 30x3 $\frac{1}{2}$ QD ...... 1095

NASH
$\begin{array}{lllllll}4.3 \frac{1}{4} \times 5 \\ \text { NATIONAL Willard Wagner } & 112 & 32 \times 3 \frac{1}{2} & \text {... } & 1395 & 1395\end{array}$
 NELSON
D
NOMA
$\begin{array}{lllllll}\text { I } & 6-3 \frac{1}{4} \times 4 \frac{1}{2} & \text { Delco Delco } & 128 & 31 \times 4 \frac{1}{2} & \text { SS } & 2800\end{array} 2900$
NORWALK $4-3 \frac{1}{2} \times 5 \frac{1}{2}$ Delco Dyneto 116 32x3$\frac{3}{2}$ SS ...... 1385
OAKLAND
 OLDSMOBILE
$\begin{array}{llllllllll}45-B & 8-2 \frac{7}{8} \times 4^{3} & \text { Delco } & \text { Delco } & 122 & 33 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & +2100 & 2100 \\ 3300\end{array}$ 37-A $\quad 6-2 \frac{13}{1 \times x} 44^{\frac{3}{4}}$ Remy Remy $1123^{32 \times 4}$ SS
OLYMPIAN
OVERLAND
$\begin{array}{lllllllll}\text { 4 } & \text { 4-33x. } & \text { A-Lite } & \text { A-Lite } & 100 & 30 \times 3 \frac{1}{2} & \text { QD } & 89.5 & 895 \\ \text { OWEN-MAGNETIC } & \ldots . . & 1485 \\ \text { W-42 } & 6-4 & \times 5 \frac{1}{2} & \text { Bosch } & \text { Own } & 142 & 35 \times 5 & \text { SS } & \ldots . . \\ \text { W..... } & 7000 & 7500\end{array}$


New-6 6-2
$\begin{array}{llllllll}6.42 & 6-38 \times 5 \frac{1}{4} & \text { A.Kent G\&D } & 119 & 33 \times 4 & \text { SS } & \ddagger 1770 & 1770 \\ \text { PA.... } & 2645\end{array}$ $\begin{array}{lllllllllllll}6-55 & 6-3 \frac{1}{2} \times 5 \frac{1}{4} & \text { A.Kent G\&D } & 127 & 33 \times 4 \frac{1}{2} & \text { SS } & \text { …... } & 2895 & 2895 & 3750\end{array}$ PARAGON

$\begin{array}{lllllllll}6-50 & 6 \cdot 3 \frac{1}{4} \times 44 \\ 4\end{array}$ Willard Delco $120 \quad 33 \times 4 \quad$ SS.....
$\begin{array}{lllllllll}56 & 8-31 \times 5 & \text { A.Kent A-Lite } & 125 & 34 \times 4 \frac{1}{2} & \text { SS } & \ldots . . & 13200 & 3230 \\ 5140\end{array}$ PIEDMONT
$\begin{array}{lllllllll}6-40 & 3 & \times 4 \frac{1}{2} & \text { Remy Remy } 122 & 32 \times 4 & \text { SS } & \ldots . . . & 1945\end{array}$

PIERCE-ARROW

$\begin{array}{llllllllll}48 & 6-4 \frac{1}{2} \times 5 \cdot \frac{1}{2} & \text { Delcs } & \text { Wsths } & 142 & 3.5 \times 5 & \text { QD } & 7650 & 7650 & 7750 \\ 98 & 6.4 \times 5 \frac{1}{2} & \text { Delco } & \text { Wsths } & 134 & 34 \times 4 \frac{1}{2} & \text { AS } & +7250 & 7250 & 7250 \\ 38 & 85.50\end{array}$

PILOT
 PORTER
4-4.6x63 Berling Wsths 142 35x.5 SS ..... $19200 \quad \$ 9400$ R \& V-KNIGHT
$\begin{array}{lllllllll}\text { R } & 4 \cdot 33 \times 5 & \text { Wagner Wagner } 115 & 32 \times 4 & \text { QD } & \text {...... } & 2150 & \ldots . . . & 2900\end{array}$ $\begin{array}{lllllll}J & 6-3 \frac{1}{2} \times 4 \frac{1}{2} & \text { Wagner Wagner } 127 & 32 \times 4 \frac{1}{2} \text { QD } & 3350 & +3350 & 3350\end{array} \quad 4000$ REO
$1920 \quad 6-3 \frac{9}{16} \times 5$ N. E. $\quad$ N. E. $120 \quad 33 \times 4$ SS $\ddagger 1850 \quad 1850$...... 28.50 ROAMER
 SAXON

SIX-42 6-34×41 Delco Delco 118 33x4 $\operatorname{SS} 2195 \quad 219.5$...... 329.5
SCRIPPS-BOOTII

SENFCA $4-3 \frac{1}{8} \times 4 \frac{1}{2}$ Conn A.C. 108 30x3 $\frac{1}{2}$ C 118.51185 ...... ...... SEVERIN
$6-3 \frac{1}{2} \times 5 \frac{1}{4}$ Wagner Wagner $122 \frac{1}{2} 32 \times 4$... ...... 2550 ...... ......

SHERIDAN SINGER 20 Wrens 138 33x5 SS ..... | 5800 |
| :---: |
| 5800 |
| 7800 | $\begin{array}{llllllllll}20 & 6-4 \times 5 \frac{1}{2} & \text { Bosch Wsths } & 138 & 33 \times 5 & \text { SS } & \text {...... } & \text { †5 } \\ \text { SKELTON }\end{array}$ SPACKE ${ }^{4-3 \frac{1}{2} \times 5}$ Conn Wsths 112 32x3$\frac{1}{2}$ SS 1295 129.j


29.) ...... ...... ......

STANLEY
Steamer 2-4x.5 ...... ...... 130 34x4ł SS ...... 39.50 ...... 6100
STANWOOD
5-34x4t Willard A.Kent 118 33x4 SS ...... 2050 ...... ......
$\begin{array}{lllllllll}\text { SKL4 } & 4-3 \times 5 \times 5 \frac{5}{8} \text { A.Kent Wstus } & 12.5 & 34 \times 4 \frac{1}{2} & \text { SS } & +2475 & 2450 & 2675 & 3450\end{array}$ STEPHENS
SalientSix 6-37x4 A-Lite A-Lite $12233 \times 4 \frac{3}{2}$ SS 2400 †2 100 *2400 3400

|  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S T E V E N S$ | STUDEBAKER

Light-6 6-31 x $4 \frac{1}{2}$ Wagner Wagner 112 32x4 $\begin{array}{llllll}\text { SS } & \ldots . . . & 148.5 & \ldots . . . & 21: 50\end{array}$ Spec.-6 6-312x5 Wagner Wagner 119 32x4 SS $1750 \quad 1750+1750$ $\begin{array}{lllllllll}\text { Big-6 } & 6-3 \frac{7}{8} \times 5 & \text { Wagner Wagner } 126 & 33 \times 4 \frac{1}{2} & \text { SS } & \ldots . . . & \ldots . . & 2100 & 2450 \\ \text { STUTZ } & 4-4^{3} \times 6 & \text { Delco }\end{array}$ TГMPLAR

VETE $4-3 \frac{1}{2} \times 5$ ….. ..... 115 $33 \times 4$ SS $1495 \quad 1495$



WESTCOTT
C-48 6-312x5装 Delco Delco 12.5 $32 \times 4 \frac{1}{2}$ SS $\begin{array}{llllllllll}\text { C-38 } & 6-3+x 4 \frac{1}{2} \text { Delco Delco } 118 & 33 x \pm & \text { SS } 2210 & 2290 & \ldots . . . & 3390\end{array}$

 WINTON
2.9010
 WI/ARD

$$
\text { 2. } 15 \text { h.p. ...... A.Kent } 100 \text { 30x3 C } 30.5 \text {...... }
$$

${ }^{*} 6$-passenger. $\dagger 4$-passenger. $\dagger$ - - passenger.




## BRITISH SPECIFICATIONS AND PRICES.

Prices have remained stable for the most part since the opening of the new year. This list is compiled as of March 15, from the latest information, and contains numerous changes since the February issue. The term chassis when used does not include coachwork. Equipment varies, and in some instances self-starters are extra. The numerals connected by the sign $x$ are cylinder dimensions in centimeters. All prices are F.O B. Factory.

£ $\ddagger 10$ 450 525 575 167173375

ALVIS. 4-cyl. $65 \times 11010-30$ h.p. 2-seater曻 575

ARGYLL. 4 -cyl. $80 \times 13015.9$ h.p. Chassis ... $\quad$... $\quad 725$ ARMSTRONG-SIDDELEY. 6-cyl $90 \times 13329.5$ h.p. Chassis 875 4 -seater Touring ... 1,190 4-seater Touring 725
Chassis... hassis Standard Model -seater Coupe Chassis
2-seater 4 -seater
$\square$ .
, 4-seater 20

BEAN. 4-cyl. $69 \times 12011.9$ h.p. Chassis 4 -seater, $\quad .$.
2 -seater, Coupé
4 -seater, , 545 625 685
BEARDMORE. 4 -cyl. $90 \times 16030 \mathrm{~h} . \mathrm{p}$. Chassis

BELSIZE. 4-cyl. $90 \times 11015$ h.p. Chassis 4 -seater Touring 30 50
C.A.R. 3-cyl. $80 \times 8010 \mathrm{h.p}$.3 -seater ...

CROUCH. 2-cyl. $85 \times 908$ h.p. 2 -seater 4 -seater Touring398


EMSCOTE. 2-cyl. $85 \times 858$-10 h.p. 2-seater .. ..... 295
ENFIELD-ALLDAY. 5 -cyl. $69 \times 9010$ h.p. Chassis . ..... 500
ENSIGN. 6-cyl. $102 \times 14033.4$ h.p. Chassis ..... 575
2,100
ERIC-CAMPBELL. 4-cyl. $66 \times 11010$ h.p. 2-seater . ..... 450
G. N. 2-cyl. $84 \times 9810$ h.p. 2 -seater $\left(+12 \frac{1}{2} \%\right)$ ..... 215
G. W. K. 4 -cyl. $66 \times 10010.8$ h.p. 2 -seator ..... 350
GUY. 8-cyl. $72 \times 12520$ h.p. Chassis ..... 375
1,275
5-seater Toruing ..... 1,675
H. E. 4-cyl. $75 \times 120 \quad 14$-20 h.p. Chassis ..... 720
2-seater ..... 910
H. F. G. 2-cyl. $85 \times 11010$ 4-seater Touring ..... 325
HAMMOND. 4-cyl. $69 \times 15011-22 \mathrm{~h} . \mathrm{p} .2$-seater ..... 585
HAMPTON. 4-cyl. $63 \times 120$ 10-16 h.p. Chassis ..... 4604 -seater Touring 580
HILLMAN. 4-cyl. 65 x 12011 h.p. 2-seater ... ... 5304-seater Touring... 660 ..... 610
Coupé
Coupé HORSTMAN. 4-cyl. $65 \times 11010.4$ h.p. 2 -seater ..... 420
4 -seater Touring ..... 450 ..... 385
HUMBER. 4-cyl. $80 \times 14015.9$ h.p. Cbassis ..... 750
4-cyl. 10 h.p. 2/3-seater ..... 600Coupé 750
LAGONDA. 4 -cyl. $67 \times 7811$ h.p. 2-seater Coupé ..... 295
LANCHESTER. 6-cyl. $102 \times 12740$-seater Touring ..... 465
MARLBOROUGH. 4-cyl. $64 \times 100$ 10-16 h.p. 2-seater ..... ,640
MASCOTTE. 4 -cyl. $69 \times 10010$ h.p. Chassis $(+5 \%) 415$3 -seater ", 450MERCURY, 4-cyl. $64 \times 10210$ h.p. Chassis $\ldots$... $\quad . .$.
2-seater... ... 500METEORITE. 4 -cyl. 66 x 10911.9 h.p. Chassis $\quad . . . \quad 450$
2-seater 590
MORRIS-OXFORD. 4-cyl. $69 \times 102$ ..... 650

STOREY. 4 -cyl. $85 \times 13220$ b.p. 5 -seater Touring ..... £850
4 -cyl. $14.3 \mathrm{~h} . \mathrm{p}$. Chassis ..... 600
2-4 seater Touring .. ..... 750
STRAKER-SQUIRE. 6-cyl. $80 \times 13020-25$ h.p. Cbassis ..... 1,350
2 -seater ..... 1,725SUNBEAM. 4 -cyl. $80 \times 15016$ h.p. Chassis ... ... 930
5 -seater Touring $\quad 1,225$
Limousine ... 1,475
6 -cyl. $24 \mathrm{~h} . \mathrm{p}$. Classis $\quad \ldots$................. 1,215
Limousine ..... 1,875
SWIFT. 4-cyl. $63 \times 9010$ h.p. 2 -seater ..... 450
12 h.p. 4 -seater ..... 665
TALBOT. 4-cyl. $101.5 \times 14025$ h.p. Chassis ... ..... 1,050
4 -seater Touring ..... 1,415
UNIC. 4-cyl. 13 h.p. Chassis ... ..... 970
VARLEY-WOODS. 4 -cyl. $69 \times 120$ 12-22 h.p. Chassis ..... 550

- 4 -seater Touring ..... 725
VAUXHALL. 4 -cyl. $95 \times 14025$ h.p. Chassis ..... 1,050
5 -seater Touring ..... 1,450
4-cyl. 30 h.p. Chassis ..... 1,275
5 -seater Touring ... ..... 1,676
VULCAN. 4 -cyl. $90 \times 13020$ h.p. 5 -seater Touring ... ..... 850
4 -cyl. 16 b.p. 5 -seater Touring ..... 825 ..... 825
WAVERLY. 4 -cyl. $76 \times 12715$ h.p. Chassis .. ..... 600
2/3-seate ..... 725
5 -seater Touring... ..... 735
WESTWOOD. 4 -cyl. $69 \times 12011.9$ h.p. Chassis ..... 525
4-seater Touring... ..... 645
WOLSELEY TEN. 4 -cyl. $10 \mathrm{~h} . \mathrm{p}$. Two-seater... ..... 430
Three-seater ..... 545
Coupé ..... 720
WOLSELEY FIFTEEN. 4 -cyl. $80 \times 13015 \mathrm{~h} . \mathrm{p}$. Touring ..... 650
4 -seater ..... 1,895
WOLSELEY TWENTY. ..... 6 -cyl. 20 h.p. Chassis ... 1,050
5 -seater Touring ..... 1,32.5
Coupé ..... 1,650
ZEPHYR. 4 -cyl. $69 \times 13011.9$ h.p. Chassis ... Two-seater


## 500

 625Four-seater
# ROYAL AUTOMOBILE CLUB MAKING FUEL TESTS 

Effort Being Made to Solve "the Burning Question" in England

AS an indication of the possibilities of e.onomy in the use of motor spirit, the results shown by an independent test of six different cars (recently carried out at Brooklands by the Royal Automobile (luh at the request of "The Motor Owner") are worthy of note. 13y merely changing to emaller carburetor jets an average increase of mileage of 22 per cent. was obtained. The average loss in maximum speed was only $2 \mathrm{~m} . \mathrm{p} .1 \mathrm{~h}$., and the average extrat time taken to climh the test hill was only one and four-filthis seconds.

With a view to getting the catrowner 10 interest himFelf in the :ubject and to expsiment with the oljeet of saving fuel, the (!]uh) is making arramgements for a mational fred ceonomy test to he hed in the ealy part of the year. In order to matio the test as comprehensioce and its appeat
as wide as possible, the Club is enlisting the co-operation of the associnted cluts all over the comuth

The intention is that on one day a series of exatity smilar tests will be held in varions districts. The test is purely one of exnomy, and, white the prime idea is 10 eneourage the economical adjustment of an existing carburetor, any form of appliance of atecessory, which, ham! fitted to a car, acheoves comemy, will now be delsomed fom the te: 1.
 that by fittime :an expensibe aterestor, it might be pesible

 when makeng the allated will bake into comsidetation the omlli!! imvelved.

## FRAZAR \& CO., COMPILE ANOTHER ROAD MAP

Enterprising Tientsin Firm Gets Out Booklet Showing Road from Tientsin to Pao-ting-fu


A stretch of road near Chinghai-hisien

In lact month's issme there was pinted an interenting account of a motor trip made from Tientsin to Peking and seturn ly Mrs. Spielman, wife of the genemal manag.

of Frazar and Co., of Tientsin, and party. And now comes anotber account of a new road mapping excursion by a second
fratte traveling mider the colors of that enterprising con(ern. this tirre to Posting-fu.

As before, the Tientsin company organized the trip primarily for map making purposes, in order that motorists in that part of China could have a safe guide should they wish to undertake the trip between the two cities.

The log was made on Februart 12, and the cars, both Dodge Biothers toming modcls, were driven by Mr. P. L. D. Plath, manager of the motor car department of Frazar and Co., and a Chinese chauffeur. In the party making


C'rnssing river our pantoon bridge at Tzu-ya 3.3.8 miles out of Tientsin
the thip were two Wemen. Mis. Spielman and IViss Sarah Fogg. Other passengers were Mr. M. H. Thibideau and Mr. R. H. Merrill. Mr. Merrill is attached to the Grand Canal Improvement board, and it was he who compiled the map and booklet which Frazar and Co., published for free distribution ameng motcrists.

In comection with this trip Mr. Plath's letter is interesting. It follows:
"The enclosed booklet with map and also the pictures are the result of our motor trip to Poatingfa made on February 12th in two Dodge Bros. Touring Cars.
(Continued on page (4)


CITROEN ACHIEVEMENT-Two stock cars on Jany. 8 was run from Tientsin io Peking in 5 hours, 35 minutes $r$-nning time, and used only $3 \frac{1}{2}$ gal. gasoline per car. The return trip next day was made on 3 gal. per car. Recently at Le Mans a Citroen won first prize making 100 km . on 5 Litrzs.

A new shipment of these economical cars in Touring Models have just arrived. All models are fully equipped, including Electric Starting and Lighting.

DE DION BOUTON 4.Cyl. 10 H.P. Chassis, the first to arrive in China, is now in Stock.

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VELIE G-cylinder Touring RENAULT 3-TON Trucks
Also fall line Kistelf Cars, F-Piss. Tunfing, 1-Pass, Sport and IRondqters. MICHELIV TIRES in Cords and Fabrics Straight Side and Clincher Types.

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# THE STATISTICAL SIDE OF THE MOTOR INDUSTRY IN THE U. S. FOR 1920 

General Manager Reeves, of the Automobile Chamber, Compiles Some Interesting Figures

By . Ilfined Reeves (ieneral Manager, National Automobile Chamber of Commerce

## Production in 1920.

Couss and trucks produced
Passenger cars: produced
Motor truchs produced

Wholesale value of pasenger calre produced... $\$ 1,7(0) 3,4,37,21: 3$
Wholesale value of motor trucks produced ... $\$ 432,746,46: 3$
Average wholesale price of passenger cars produced
$\$ \times 97$
Average wholesale price of motor trucks produced
\$1,273
Motor truck manufacturers in production ...
Passenger car manufacturers in production
States in which factories are located
Employees engaged in calr and truck manu-
facture
Automobile tires manofactured
300,000
32,400,000
Increase in gasoline production over 1919 ...

## Automobile Exports in 1920.

Talue of notor vehicles and parts exported, including engines and tires
$\$ 338,000,000$
Number of passenger automobiles exported.
153,000
Increase in number of passenger cars exported
Value of passenger cars exported
\$15.), 00
Number of motor trucks exported
Increase in number oif trucks exported
Value of motor trucks exported
Number of countries to which automobiles were exported during year

## Automobile Use in United States

Automobiles registered in U. S. (approx.) ....
Passenger cars registered in $\mathrm{I}^{\circ}$. S...
Motor trucks registered in L'. S. ..
Cars and trucks owned hy farmers
fercent. of 1920 output bonght by agricultural districts
Passenger cars owned by doctors
State-owned cars and trucks ... ...
Ifuncipally-owned cars and truck:
Cars and truchs entering and lating New Lork City daily
Persons carried to and from New Sork daily by calr anc̉ truck
Trucks owned by farmers ... .... ... ...
Labor-saving value of truck to cach farmer annua!!y
Saving in transport charges to each aunually through use of truck

30,125
10,31.4
1.54, 7.2

420,095
8,500,000
7, 5000,000
900,000
2,500,000

600\%
110,000

80,000

## Autimobile's Part in Nation's Business.

A:omant of pecial taxee paid :unually by indest! t) Feleral (overmment
\$2..7, (0):, リ10
Remistration fees paid he car users ... ... $\$ 81,000,000$
Percent. of all cars used more or less for b)

Percent. of total mileage used for business ... $60 \%$
(Giain business efliciency frem use of car as reported by average owner ... ... ... ... $570 \%$
Average increase in doctors' efficiency through use of car
$104 \%$
Percent. of steel supply used by automobile induntry
$4 \%$
Amount paid by industry to railroads for
freight on shipments of finished motor vehicles
$\$ 100,000,000$

## Dealers and Garages in U. S.

Passenger car dealers ... ... ... ... ... 36,210
Motor truck dealers ... ... ... ... ... ... 20,596

Repair shops ... ... ... ... ... ... ... 47,556

## CAR TAXATION IN ITALY.

In all countries the-taxation on automobiles has been incroased since the armistice, but in no country has it been so exorbitantly increased as in Italy. The new tax, which mas to he effected this month, has caused a great deal of dissatisfaction in! all classes of the industry. It seems' even the Socialists who are responsible for this new legislation are looking upon it with alarm.

With is tax of $\$ 3,000$ gold on two well-known Italian post-war models and with taxes of $\$ 240$ on the twelvehorsepower Fiat, which would by no means be considered a high-powered car, and $\$ 330$ on the new fifteen-horsepower four-cylinder, which is rated at twenty-two horsepower under the Italian laxation scheme, few purchasers' will be found for these cars. This will be felt by manufacturers, motorists in general and workers, who will undoubtedly be thorn out of employment in large numbers.

## TWO BIG PLANTS RESUME

Two factories which recently resumed production are the Tarrytown plant of the Chevrolet Motor Co. and the Oakland Motor Car Co. plant at Pontiac. Each started on 100 cars per day.


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| CROSSLEY | MITCHELL | DELAGE | KING |  |
| CADILLAC | MARMOM | DODGE | FIAT |  |
| WILLYS-KNIGHT | STUDEBAKER | HUPMOBILE |  |  |
| PAIGE |  |  |  |  |



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# FORD'S CANADIAN MANAGER TO GET BIG FACTORY JOB 

W. R. Campbell Slated to Succezd Klingensmith, Says Gossip - Henry's Attacks on Jews Proving Disastrous

WHIL IE , flicial :mmonecmunt is latking, it is stated on athelonty that II. R. ('amplell, sectetary and
 cf Canada, will succeed F. L. Klingensmith as vice-pre-
 Was recently at dre Highland lank; lant and io dituall? in authonity at the lig fectory.

Klingensmith held the position of treasurer, hat it is understiod the duties of that office will be given to some one other than Campbell, who will derote his entire attention to active management of the plant, chiefly :ang production lines. It is reported that important financial matters in fiture will te handled entirely by Henry Ford, whereas Kilingensmith heretofore negotiated practically all the financial deals.

Campboll is thitty-nine years old. He haz been with the Ford company of Canada since it was organized in 1904. Prior to that he was with the Queen City Oil Co. His home is at Walkerville, Ont., where the Canadian plant is located. He is said to be of exceptional ability and Henry Ford is said to have had his eves upon him for a long time.

The Ford organization still is in more or less of a state of chaos. WY. C'. Anderson, director of operations in Europe with headquaters in Londen and Paris, tendered his resignation last week and this was followed be that of Louis Block, in charge of the Philadelphia branch.

In the alsence of stateneents from officials as to the rasen for these resignations and the reluctance of both Inderson and Block to discuss them, semi-official statements are to the effect that the anti-Jewish campaign of Henry Ford's newspaper, the "Dearborn Independent," is responsilile. From a man close to Anderson it was learned the foreign chicf had leen driven to the point of serening relations with the company by reason of a virtual borcott on Ford products in foreign countries as a result of the attack on the Jews. This man said not only were the majority of foreign dealers of Jewish descent, but that the roney in Europe was in the control of Jewjsh bankers. Likewise, probally a majority of the prospective customers for Ford products. were of Jewish origin or closely connected with that race.

Business: in thie foreign commrics, it is said, began to slump several months ago at the outset of the campaign and grew worse rapidly until the point was reached where it becnme arrarent the attitude toward the Ford Jewish fight had practically ruined the business of the company on the continent.

Anderson, who is regarded as one of the most competent men in the foreign field, is said to have made repeated entreaties, appeals and finally demands that the Jewish attack cease, but all of his efforts are said to have been un-
availirg and instad the attacks became even more bitter. Il:c scont resglation of Vice-President Klingensmith, which was in great measure due to the same cause, conrinced Anderson, according to his friend, that there was no altorr: tive ard le promptly decided to come to Amorica and tomer his resignation.

Ardereon is ridely known among automobile men in Ancrica and leunpe as "Fuzzy" Anderson. He was one of the many bicycle racers who entered the atitomobile businces at its inception. He joined the Ford company as branch manager sixteen years ago and later was put in charge of the Chicago business after several yeare in St. Lonis. Two years ago he was selected, after a survey of the entire Ford organization, as the man best qualified to take charge of the Ford European business. He was sent abroad with full control of production and sales during the reccnstruction period, and established a record that automobile men and Ford officials admit was remarkable. Anderson has been in Detroit several days. While he has no plans to announce for the future, he has been in constant association with leading manufacturers, and his friends say it is not unlikely when he leaves Detroit he will go as the foreign representative of one of the newest cars on the market.

No information could be secured regarding the resignation of Block other than statements of friends that he was prompted by the same reasons that forced the resignation of Anderson.

## DURANT "SCOUTING" FOR FACTORIES

$\mathrm{TV}^{\circ}$. C. Durant is a busy man these days, lining up his organization and his plan, and the problems connected with it. He is doing a lot of quiet traveling, inspecting various plants that are thought to be available. It is presumed, of course, that could he get at an attractive price an alreeady established business, it would suit his purposes better than creating an entirely new plant with the consequent delay.

During the last weeks, the trail of the man who "put the 'come' in come-back," has been picked up in Wisconsin, thongh, of course, there is no certainty that a location in that state makes any stronger sppeal than the fact that a plant of the proper size and kind is available for his needs. In spite of his desire to keep it limited, it is known that the project is rapidly assuming a bigger size than Durant had pianned. It is understood that he is to be jcincd by his son, R. C. Durant, who will withdraw from the Chevrolet organization on the C'oast for that purpose.
'This, of course, is left in thoroughly capable and experiecnod hands, since Norman Dee Vaux, president of the California Chevrolet company has let it be known that he proposes to remain in that capacity.

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# FUEL COST AND TAXES NOV/ AGITATE BRITISH MOTORISTS 

Trade Observer Explains their Bearing on Economic Life of the Country

WITII regard to the matter: of immediate interest 'o moturits in England two vitall! impertant items oltrude themectres. These :as the price of fael and the mew tasation shemes. The trade press has never failed to recognise the gravity of any action which mas hate a deterent affect (an the fintunes of the allemmelite industry as a whole, and on the welfare of motorists as a body. Even with the New Year reduction of 7 d . per gallon in the retail selling $\mathrm{f}^{\text {rice }}$ of gatabline one is convinced that the price is still fas toos high. The profits of the great oil complaies show clearly the huge margins of profit to which these corporations work. Scmo effort is now observable among the great fuel distributing firms to effect economies in distribuion. This is all to the good, and when the resulting bencfits accrue, one sincoroly trusts that not only the immediate shareholders, but the gencral mass of motorists will benefit.

The oil kings should remember, before it is too late, that far more than mere consideration for the pockets of mosor car uners is involed in this question of dear or chearp fuel. The vast problem of unemplorment now confionting the nation is affected vitally by this matter. The motor indestry empleys hundreds of thousands of hands, and if fuel continues at a price which the majority of motorists do not feel themselves justificd in paying, the increase of unemployment is bound to be enormously aggravated.

Road transport of goods has nowadiys assumed vast proportions. The dearer the fuel the dearer the rates: thus - every penny on or off the price of a gallon of fuel is reflected in the weekly budget of every householder, whether a motorist or not. Indeed one may saly with truth that every one is a motorist nowadays-some directly, others indirectly.

The matter of taxation is a great and involved one. Increased motor car faxation whas bound to come. Everyone wants, and must have, better roads, and someone must pay for them. Motorists are the greatest road users, taking miles traversed per annum into consideration. Therefore it was inevitable that motorists would have to foot a fairly stiff bill: The objection of most fair-minded motorists to the new taxes is that they are unfair in their incidence. No recognition of the capital value of a car has been taken into consideration, and, therefore, it is easy to show that the poor motorists is relatively more heavily taxed than his richer brother. Thus the owner of a Ford pays nearly 10 per cent per annum in tax on his car value, while the owner of a Rolls-Royce is called on for only approximately 2 per cent on the car's initial value. Many of the promising little air-cooled four-wheeled runabouts are very harshly taxed when it is recollected that their capital value is only about that of a good motor cycle and sidecar combination. In the cheaper fields of automobile design and construction the new tax will ate as a cleg on progrese.

Much of the difficult! and unfaimess has arisen from the Ninistry of Transport taking the moribund h.p. deinnition of the Royal Automolile (lub as thie basis for rating for the tax. One wonders when the R.A.C. is gcing to asent itself and become a live force operating for the general grod of motorists and motoring rather than spending most of it. cmergy in catering for the social side of its club life. There is one matter in which real activity is necded on its part. This is in regard to the development of small cars. The avcrage motorist is prone to think that the R.A.C. officials only think in terms of big cars. One would like to see a little more onthusiasm apparent in Pall Mall in fostering the smaller vehicles. When it comes to a question of organising a trial for small cars, or for races for bigger ones, it would appear that the 1920 policy of the R.A.C. has been to lie dem to the dictates of the industry. Really the generul impression apt to be formed from this is, that the industry is either doing so well that it cannot be bothered with tials or races, or so badly that it cannot afford them. That has been the impression gained by vory many motorist ${ }_{3}$ in 1920.

It is expected then 1921 will see a general awaliening of interest in competitions, bioth on the part of the Royal Automobile Club and the members of the industry. Motorists and prospective car buyexs are always interested, and many of them are asking when somo really big competitions are going to be organised. Competitions foster a spirit of emulation. Designors and makers alike strive to improve their products, and the public interest created $\epsilon$, venmally attracts more converts to the pastime which is all to the good of the industry

## FUEL RECORDER LATEST ACCESSORY.

Periodically the manufacturer who would prefer to let well enough alone has beon cursed with a plague of telltale instruments, the general purpose of which seemed to be to lay bare the shortcomings of his product in this respect or that.

Such another plague seems now to be approaching. It is signalized by the device which tells the rate of fuel consumption of the car, right while the process of fuel confumption is going on. Such an instrument has long been recognized as desirable, and as often happens, the appearance of one has been the signal for the appearance of several. They are welcome, not because they will be the means of adding a little more to the cost of equipping the car, but because, according to their practicability in long service, they will play an important part in keeping the fuel quection before the eye of the motorist.

## DENNIS MOTOR LORRIES



A 5-Ton Lorry recently delivered to the Chinese Government

VERY lorry chassis is given a final test with a full capacity
load. Each chassis after being erected goes for a road test of several miles over country which gives excellent tests of the power and hill climbing capacity of each mazhine, and also supplies natural hills for brakic testing, etc.

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## Motor Car Tendencies as Revealed at this Year's Shows

(Continued from Page 36)
stripped chassis it is hard to reach these cups, but when the body is mounted, the fenders put on, and road dirt has collected, it is a foregone conclusion that these points will be neglected. In fact the manufacturer might about as well save himself the price of the cups.

In simplifying the chassis, or in other words, cutting out the unnecessary parte, there have been some noticeable achievements. These have been particularly the case where the designer has been able to make one part do the duty of two. For instance, there are a great many instances where the cross member of the frame has served also as the anchor for the front rear spring hanger. On the Cleveland car this is very neatly accomplished. On the Briscoe the frame cross member has been extended and forms the front runningboard carrier. This is a nice bit of economy, but has the possible objection that in the event of the all-toocommon collision, the owner's repair bill will be somewhat heavier, should he happen to be struck at tlis particularly vulnerable point.

Another clever bit of manufacturing economy on the Briscoe, which is noticeably good in this respect, is the use of the central U cross member as the battery retainer. This eliminates the customary cradle and certainly gives a firm support to the battery and at a very accessible point of the chassis.

On the Davis car there is a combined tire carrier and tank support which is a good example of making one part suffice for two purposes. Others make the rear cross member act in this capacity, either supporting the tire carrier, the tank or both. The new Lexington, which makes its first real public appearance at the show, uses the built up Z bar somewhat like the Marmon frame, but bolted instead of riveted for easy replacement in case of collision or other damage. In this type of frame the splash aprons, etc., are structural members.

There has been an increased stiffness in all types of chassis. One of the points which illustrates this quite clearly is in the increased use of tubular cross members both front and rear. On the Willys-Knight these are used on both ends of the chassis and are light, while at the same time they are good stiffening members and in the case of the front end of the chassis they furnish additional protection against collision, particularly protecting the radiator against the minor collisions which are constantly occurring in the congested parking centers. Cole uses a heavy tube at the front end of the chassis and Templar at both ends. An interesting chassis stiffener is the large flat plate at the rear end of the Stearns. This exends across the entire rear end of the chassis and beside providing a stiffening member acts as a foundation for the rear tire carrier.

One of the greatest lines of improvement in the chassis is the incorporation of anti-rattle features in the brake mechanism and in the shackles. In the brake linkage there has been a noticeable growth in the use of tension springs which keeps the linkage continually taut so that there is no chance of rattle. On the Oakland cars these little coil springs are very ingeniously mounted inder the cross momber which supports the brake equalizer shaft. The springs are smaller and more compact than usually employed for this work and are hung upon retainers which are free to rock in the cross member.

In preventing rattle in the shackles, which are notably the worst offenders in this respect, the use of the adjustable shackle on the Lccomobile and on the new Navarre, designed by A. C. Schulz, furmerly of Locomobile, are of interest. These have a take up secured by a clamp, which permits of compensation for wear. On the Navarre the spring is allowed to center itself on the bolt and then the bolt retainer is brought against a washer which is forced against the spring. Since the spring is allowed to center itself before the bushing is screwed against it, it is not necessary to hold the spring width to close limits in manufacture. The adjustment is held tight by a clamp bolt, the end of the frame horn being split.

There are a number of variations in practice in the supporting of the rear end of the rear semi-elliptic spring. Where the frame has tapering side members, many designers are keeping the spring itself parallel to the center line of the car. The use of a prominent drop in the rear end of the frame to coincide with the flatter spring suspension is quite a prominent feature and a few makers are sweeping the horn down for the purpose of dropping the side rails slightly, making the rear shackles tension instead of compression members.

Throughout the entire line of exhibits there has been a notable effort to increase the stiffness of the frame through the use of deeper side rails, by a greater number of cross members and by more thorough gusseting. There are a great many frames which tapper materially in depth. For instance, the Scripps Booth, which is very noticeable in this respect, the depth of the frame being constant for only a short portion of the length. The Maxwell is another example in which the frame tapers considerably in depth. The majority of frames, however, have only slight taper and this takes place at the extremities. The bottle-neck type has about disappeared and in its place the tapered frame is used to get the narrow front end necessary to give narrow turning radius and a sightly front end.

There are not any noticeable steering developments except perhaps in the lubrication of the parts where practice has been improved in line with what has already been said under the head of chassis lubrication. There is, however, a tondency on the part of a great mary to usc heavier oversize parts. The Hupp has been materially strengthened in this respect, the steering, gear having been entirely revised and a larger unit installed.

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# FIAT TRUCKS NEGOTIATE SANDS OF THE SAHARA 

Italian Machines Prove that the Camel is Not the Only Ship that Can Negotiate Deserts



NOWHERE in the world can greater transportation difficulties be encountered than in the Sahara desert, and so great are the obstacles encountered that it is generally supposed this region is practically inaccessible to all wheeled vehicles. Some time ago the French Government decided to open an experimental aerial line of nearly two thousand miles in length from Alger to Tamanrasset, right across the Sahara desert, and the problem had to be faced of establishing gras and supply depots along this route for the use of the planes. In reality this initial trip by car was the most important as well as most difficult portion of the undertaking, for while the planes were capable of flying this distance, it would have been folly to have sent them away without preliminary organization along the line of flight.

A conver of 23 Fint $1 \begin{aligned} & 1 \\ & \text { ton trucks whe selected to }\end{aligned}$ make the journey into the desert, taking with them, among other sumplics, ene thousand gallons of fuel and three wireless telegraphy receiving stations. The vehicles were the well-homan nomal tye used reme extemively he the Allied Armies during the war, with open hodies and demountable tops, the only change of importance being the fitting of dual pneumatic tires on the front, duplicating those on the rear wheels. This change was made in order to over. come the tendency of the trucks to led in the sand, and to gire better suspension over the rocky portions of the route.

The stalt was made frem the suburbs of . Nger, and the
furst stop of impcrtance was made at Ouargla, 530 miles away. It was at this point that the last vestiges of civilzatien were left behind and true desert conditions were encountered. At the best the road was only a camel track, but frequently this disappeared entirely and the first motor caravan to successfully invade the Sahara had to travel over trackless sand alternating with rocky surfaces most destructive of tyres and mechanism.

The outward joumey of 1,864 miles was accomplished without any mechanical incident, Tamanrasset being reached one month after starting out, and after establishing stations at Inifel, In-Salah and Hoggar. The return journey, was made under similar conditions, but naturally with a reduced load. Before the Fiats undertook this trip, several unsuccessful attempts had been made with trucks of other makes, and it was because of these failures that considerable scepticism prevailed in official circles regarding the ability of any vehicles to accomplish a journey of this length and difficulty.

Not only did the entire convot of 23 Fiats reflirn to the strating point, but on coming back they picked up eleven of other malics, which had been abondoned in the desert duning previous attempts, and towed them into Alger. The foufun:ance, while being to the credit of the vehicles undertaking it, shows the important role which motor lorries must play in opening up aerial routes across trackless country.


IT is the carbon that steals the power of your engine - causes that knock-and retards hill climbing. Cleanliness is the secret of a powerful motor that will take hills and pull through mud and sand on high.
Johnson's Carbon Remover is the easiest, cleanest, safest and most satisfactory remedy for carWon. It will save you $\$ 3.00$ to $\$ 5.00$ over other methods and without laying up your car. Johnson's Carbon Remover, used every 500 miles, will prevent the accumulation of carbon and keep your motor snappy and full of 'pep'. You can do it yourself in ten minutes-without even soiling your hands-and the cost is trifling.

## Johnson's Car Savers Keep Your Car Young

If you run your car without any attention you will sell at a big loss. But with a little time, care and Johnson's Car Savers you can cut the depreciation in half. There's a Johnson Car Saver for every purpose-no experience is required for their use-and they can all be applied by the average motorist with perfect results.

> Johnson's Radiator Cement-seals leaks in two to ten minutes.
> Johnson's Black-Lac-a permanent and waterproof top dressing.
> Johnson's Auto-Lak-a quick drying, one coat body varnish.
> Johnson's Cleaner-will remove scum, grease and road-oil.
> Johnson's Prepared Wax-for polishing body, hood and fenders.
> Johnson's Stop-Squeak Oil-stops squeaks in springs, shackle bolts, etc.

Insist upon your dealer supplying you with JOHNSON'S CAR SAVERS. Don't stock or use unknown substitutes. Write for our folder on Keeping Cars Young-it's free.
S. C. JOHNSON \& SON, Racine, Wisconsin, U. S. A.

# SALES OF USED CARS AT AUCTION SUCCESSFUL 

Novel Method Adopted by London Firm is Found Practical

TIII: amount of husimes tramsaticd nowative in the sale ly alletion of second-lathd (ans is very (ent siderable. Fine showrooms were oprened mently at 193 and 194, Tottenham Court Road, 1.ondon, W: 1, hy Nesstr. Smallman Bros. These premises, which have heen built specially for the holding of auction sales, provide a itoos space of some 14,000 s.quare feet, the roofing is almost entirely of glass, the lighting at night is every adequate and effective, the equipment thronghont is u-to-date and no expense has been spared to obtain efficiency.

The concern also offer very attractive tems to theis clients, whether buyers or sellers, and trial runs can be had on any vehicle before the sale. A nominal fee of $5 /-$ is charged for the run, which is returned if a purchase is effected. Commission on sales is charged at the rate of 10 per cent on the amount realized, while in the event of a car not selling, an auction fee of $£ 1$ is charged. Provision is also made for washing and cleaning cars on arrival, for fully covering them against fire and accidents that might
occur during trial runs. Competent drivers can also be sent to fetch vehicles; a charge is made according to distance.

Although it has been found impossible for the auctioncers to give a guarantee with the cars disposed of, a report can be made of the condition of the car by arrangement. Further, it is the intention of the concern only to sell cars that are in a decent condition.

Sales are held on the Tuesday in each week and the vehicles are always open to trial and inspection some few days previously. The first of these sales took place recently when some 60 cars, in addition to trucks and motorcycles, were placed under the hammer. The majority of the wehicles were in excellent condition, and included two 1920 six-cylinder Scripps-Booth, two 1920 Chevrolets, 1920 Hampton, 1920 Essex, two Sunbeam-Rovers, 10 h.p. Humber two-seater, Daimlers, Wolseleys, Sunbeams, Tallots, Clement-Talbots, Austins, and Studebakers.

In passing, it is of interest to note that Mr. Howard Smallman, the head of the concern, has been connected prominently with the motor industry for the past 15 years.

## AN ARGUIMENT THAT WON TWO VICTORIES

## It Sold a Car for a Dealer and Squelched a Street Crowd

IREALLY think," said one who had an admirable new car on order, the purchase of which involved a goodly sum, "that in these hard times I shall do right to cancel the order."
"But we dan afford it," replied Nadame. "Trhy go without pleasure one can legitimately afford?"
"But people talk so. They will call it ostentation, and ask, if we must have a new cat, why not have a cheap one, and so on and so forth."
"Very well, you know best. Cancel it if you think you ought to."

Extract from letter from sales manager to our buyer in reply to letter of cancellaion.
". . . We gather from your letter that your desire to cancel your order is not prompted so much by personal financial leasons, as from a desire not to give prossible offence to outsiders by appearing, in these difficult times, in a new and high-class car.
"May we respectfully put before you the suggestion that, were all buyers, so situated, to cancel their orders, thu present unfortunate heavy unemployment would be vastly aggavated, and the financial somathe of many innemtent manufacturing firms gravely jeopardised. In view of such undoulted facts. we truat that you will seconsider yome decision, and allow us to complete your esteemed order.....""
"That being so, my dear-and I confess I had not thought of such a point of view before-I think I will have the car. We'll write and tell them so, and hurry up delivery."

Quorum of unemployed glance at the new car as it carries its owner to his work. Meaning looks and winks are exchanged. General deprecation of the possession by anything costing much money. ". . And I tells. yer, if 'e can afford to buy such things as that car, 'e can afford to put on a few more 'ard-up workin' men, eh mates?'" Carkied, nearly unanfmously, save fkr the possessor of one roice, who immediately became highly suspect. Still, mates," opined this one, "somebody's had to make the car, "aven't they?"

Many of the light diffusing devices now popular are designed to operate when in a certain fixed position. Vibration may locsen the glasses in their rims so that the whole lens creeps around and the diffusing properties are lost. Some of these glasses have a means of anchoring them firmly in jlace, but others have not, and it is up to the car owner to see that they are properly in place. Screws may be used for fastening them and a lock washer should be jnserted under each of them.


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WE CAN ALSO SUPPLY YOUR TRUCK BODIES
As we Own and Operate the largest Motor Truck Fleet in China it follows that our Body Building Facilities are the best.

## THE CHINA GARAGE COMPANY

WE WILL BE PLEASED TO MAKE A DEMONSTRATION

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FEDERAL
$31 / 2$ TON
TRUCK


## INSTRUIMENTS GALORE AT BIG AUTO SHOWS

Some Day the Driver Won't Have a Thing to do Except Enjoy the Scenery

OBlJotes the insontor: hate absolutely made up their minds that antemobiles (ammot int on moch further unless they are equipped with some sort of direction signal. They are rallying to the idea almost daily, it would seem, each with an individual and supposedly, basic thought in the matter, and quite a number of them are rallying to the shows. Some of these devir:of which the (hicage show had its full shate, are most ingenicusly contrived, and some ate not. They are wonked automatically, but usually in conjunction with the application of the brake.

There is this to be said, howerer, that a signal that is worked automatically does not anticipate the change of movement of the car, but synchronizes with the operation that causes the change. Manual operation, on the other hand, permits the driver to give notice, in advance, of his intention to change either the speed or direction of the carr, and so gives drivers of following rehicles due wanning of his purpose. On the other hand, there is this more to be said of the manual system, that when a driver gets in a jam and has to move quickly, he may forget to operate his manual "stor" signal before he reaches for the brake, and it he forgets to use it he might as well have no signal at all.

So these enthusiastic signal men are divided into two groups, each having something to say in favourr of his own particular group of devices, as well as his own particular device, and also something to say in disfavour of the opposite
group of devices. In the meantime the public streams on l.a:- 17 ex exhibits of these and the many other new and strange things that the show discloses.

For it can be said of Chicago, as of perhaps no other show place, and certainly not of New York, that there are no end of people just crazy to break into the show, but barred by the fact that the show is not big enough to hold them : H1. Some day Manager S. A. Miles may get around to holding-in Chicago-a national show for automobile inventors. When he does there will be so many exhibits. there will hardly be room for the public to get inside. The idea is open to others, of course, but Miles is the only living man who could get away with a thing of that kind and make it pay. He could.

Dash-board instruments, of course, abound. Seemingly the inventive mind simply cannot bear to see an unoccupied space on the instrument board, and while the speedometer people and others are working exceedingly hard to consolidate and beautify the application of necessary instruments to the car-the Waltham Watch Co. is doing remarkable work along this line-others are constantly coming forward with new material. There is an instrument that indicates whether the battery needs refilling with water, an instrument that indicates the engine heat condition, an instrument that indicates the rate of fuel consumition, and so cm.

## Have the Bankers Got Henry Ford Up A Tree? (Continued from page 26)

Then, after Ford received his profits from the company, he had to give up over 70 percent of them to the Government income taxes.

Meanwhile the $\$ 60,000,000$ lank la had fallen due and had to be taken care of.

To aggravate Ford's extended financial position, he had, for the first time in his career to close down his works because of lack of orders. Until then Henry Ford's ever-present problem had been one of production, more production and still more production. He hadn't taken into his calculations the possibility that they day would come when the world would not eagerly absorb his cars as rapidly as he could turn them out. The urexpected shutdown stopped the tidal wave of Ford receipts-but not the accumulation of bills for materials rolling in upon him. Then, to add one more straw to the camel's back, he had to fork out almost $\$ 10,000,000$ in wage bonuses at the new year.

In the midst of his multiplying troubles a veritable antiFord storm was precipitated by his extraordinary campaign against the Jews in his weekly newspaper.

Then one by one his lieutenants began to get out or be put out, The list embraced Frank L. Klingensmith, vicepresident and treasurer; Charles E. Brownell, publicity director ; Dean Marquis, head of the famous Ford Welfare Department; W. C. Anderson, European agents of the Ford company ; while before then Ford's engineer, Harold Wills; his sales manager, Norval Hawkins, and the head of his: sociology department, John $\mathfrak{R}$. Lee, had withdraw.

W'orse thar: all of this, Mr. Ford's only son, Edsel, who naturally is the apple of his eye, was suddenly stricken with appendicitis, and as Mr. Ford had elected him president and was putting him forward as the mainspring of the whole works, all financial negotiations were held in abeyance, pending Edsel's recovery. Edsel came out of the hospital and immediately tock up consideration of the pressing financial problems. These negotiations are now proceeding.

It is just possible that a definite announcement of a Ford note issue-probably $\$ 50,000,000$, but perhaps largerwill be made within a few days. If not, then another hitch will probably mean considerable delay.

Incidentally, Henry Ford is a worried, disappointed and somewhat disillusioned man to-day.

## PHONE CENTRAL 6001

$-$


## TIRES

## "MOST IN DEMAND"

## 9 HONGKONG ROAD, <br> SHANGHAI.



5-ton "KARRIER" lorry fitted with steel-lined and reinforced tipping body and twin-screw tipping gear.

## REMARKABLE SERVICE UNUSUAL ECONOMY. COMPLETE DEPENDABILITY.

These are three reasons the lorry is supreme. These are three reasons we get repeat orders.

Write for Catalogue.

## KARRIER MOTORS, LTD.

KARRIER WORKS, HUDDERSFIELD, ENG.

## THE "KARRIER" REDUCES

 DELIVERY COSTS AND INCREASES YOUR TRADING AREA.Besides giving all the speed you could desire, the operating cost of the "KARRIER" is significantly small when compared with that of other lorries.

It meets the demand of the majority and covers the widest field of utility-it is the greatest value on the market to-day.

## How Manufactures Can Help in Building A Large Market for Motor Cars and Trucks in the Far East

(Continued from 9 Page)

in countries where the dealers are not numerous enough or not sufficiently well organized to handle the proposition properly themselves? Is the fact that they never have done so a good reason why they never should do so.

For the manufacturers to say that they could not support a foreign show because they never had followed that policy, at home would be the best possible evidence of their lack of understanding of this foreign market that they are always talking about capturing. The reasons they had for not supporting home shows will not hold with respect to the foreign show. If the foreign dealers were as numerous and prosperous as they are in home communities it would be all well enough to tell them to go ahead on their own hook, and to look after their own show.

But they are not. The Shanghai dealers, for instance, are not in the same position, with regard to a show, as the dealers are at home. They are not as numerous in the first place. At home there are enough dealers in every city to underwite a show from the start, with no great risk to any of them, for the simple reason that if the show should turn out a flat failure the pro rata loss of each one would not be great.

But it is different in Shanghai and other Far East centers. Here, the whole burden of financing a show would fall on about eight or ten dealers, and these men, in addition to standing the preliminary expense of the show, have no way of knowing whether they would get anything back. The chances are all in favor of their doing so, but there is no certainty about it like there is at home.

After the first year the "sea would be charted" so to speak. They would have something to go by-a standard-like they have at home. They would know from the experience gained in the first show just what they could expect in the way of public support, and could make their layout accordingly, as the dealers at home do.

But for the very reason that there would be an element of uncretainty about the first show, the manufacturers ought to be willing to take part of the gamble, particularly in view of the fact that the risk would be very small for each one, whereas if the dealers were to assume it themselves the individual risk would be large, as large, in some cases probably, as a whole year's profits.

That is too much to ask of the dealers. It is too much particularly in view of the fact that the advantages to be derived from the show world accrue as much to the manufacturers as to the dealers. The manufacturers ought not to say to the dealers: "You take all the risks and if it

## AUTOS USED TO GAS GOPHERS

## California Rancher Routs Pests by Making Use of Exhaust

Here's a new use for an autombile. A California rancher wrote to the Los Angeles branch of Goodyear, not long ago for an order of hose to be attached to the exhaust of his automobile. Conjectures and much speculation were answered, when it was learned that the rancher was using his car to kill gophers. He placed the free end of the hose, which had been attached to the exhaust of his machine, in the gopher holes and succeeded in causing great mortality to make use of the opportunities that exist for mong the pests by the gassing method.
turns out well we will grab our share of the proceeds." Yet that is what they do say, in effect, when they tell the Far Eastern dealers to go ahead and hold their own show.

The manufacturers could send the cut out chassis out here after showing them in the various cities at home. They would not need to build new chassis, as that would be an entirely unnecessary expense. By using the old chassis they would get still further use out of them at very little additional cost.

Mr. Hoover, the Secretary of Cominerce in the new administration, is talking about helping foreign trade. Very well, if he wants a concrete suggestion as to how to do this let him get government action toward the transportation, at nominal rates, of automobile show exhibits (and other show exhibits for that matter) that are to be used for exhibition and advertising purposes in foreign lands. The government has a big fleet of idle ships, why not put some of them to such a used as this. The same thing applies to the foreign trade boosters in England and France and other countries. If this were done the cost to the individual manufacturer would be very little, and since it would be an enterprise that would serve the whole country in the long run, why shouldn't the government give it consideration. That would be a real way to help, and far more effective than going up to New York and making a speech to a bunch of white shirt fronts in the main ball room of the Waldorf Astoria. There is too much speaking and writing on the subject of winning foreign trade, and too little ačtion.

Let the manufacturers get behind this automobile show organization in foreign countries. That is the best way for them to help create a foreign market, because the automobile show is automobile advertieing, and advertising will build a market here exactly as it did at home. Iet them quit talking about "policy," and come to a recognition that they bave problems that the old "policy" did not contemplate, and does not cover. Iet them realize that what they have done heretofore is not necessarily a safe guide as to what they should do in the future.

That is one tiig important way in which they call help to increase the value of the foreign marke for theis products.


## Milliown

are not a luxury but a comfort you can well afford.

Their cost of operation is a trifle; they return a wealth of pleasure.

The use of electricity for driving motor cars has brought down the running cost until the high cost of gusoline is no longer a factor in automobiling.

Andersen, Meyer \& Co., Ltd.
agents in china.
Canton Foochow Hankow Harbin Hongkong

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## COMMERCIAL VEHICLES

## THE

## ALLIANCE

ASSURANCE COMPANY, LIMITED
(ASSETS OVER £24,000,000)
-ONE OF THE

## LEADING

BRITISH
OFFICES
OFFERS AN EXCELLENT POLICY FOR
LORRIES
(With Trailers if Required)
AND ALL KINDS OF

## COMMERCIAL

 VEHICLES
## AGENTS-

## JARDINE, MATHESON \& Co., Ltd., SHANGHAI, <br> AND AT

TIENTSIN, PEKING, HANKOW, TSINGTAO.

The Outlook for Commercial Aviation in England (Continued from page 17)
(onnenience of tach pxasenger, and an adequate system of heating ind lighting by means of electricity is installed. Any or all of the seats may be removed for the conveyance of mails or cargo, and a total space of 570 cubic feet can thus be made arailable.

In addition to the two pilots, the machine is capable of lifting al land of $2,7(0) 11 \mathrm{~s}$. with fuel for 5 hours flight, or Altematively $f$, (ive) llos. with fuel for $\frac{12}{2}$ hours flights.

Fhis machine whilst undergoing speed trials some time ago, with engines "all out" registered a speed of 134 miles per hour at a height of 2,000 feet. With engines throttled dewn to $1,36(1)$ revolutions per minute, that is to say at rather more than half throttle, the speed indicated was 105 miles por hour, a really excellent performance. At the same time it is of considerable importance to note that the machine required a very small area for taking off and alighting purposes, the measured distance after the engines were let "all cut" before the machine left the ground was little over 100 yards.

> The following is a brici Spesification of the "Bristol" Pullman Triplane."

Weights and Dimensions:
11 eight empty
... 11,000 lbs.
Weight loaded

Top Plane
Wing span (Centre (Bottom
chord of wing
Wing Area
Wing loading
Uver:lll length
Maximum Height
Petrol ('apacity
Performances:
Best Speed
truising speed
Linding speed
('limb) to a,000 feet
cilimb to 10,000 feet
ceiling
Range
. $17,750 \mathrm{lbs}$.
81'8'
$81^{\circ} 8$

- $783^{\circ}$
. $8^{\prime} 6^{\prime \prime}$
$1,905 \mathrm{sq}$. feet
. 9.3 lbs. per sq. ft.
$52^{\prime} 0^{\prime \prime}$
$20^{\prime \prime} 0^{\prime \prime}$
430 galls.

125 m.p.h.
$100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.
$55 \mathrm{~m} . \mathrm{p} . \mathrm{h}$
ŏ minutes
15,000 feet
12 minutes
525 miles

## AUTOMOBILES NECESSARY, BANKERS SAY

It is interesting to note the worth while comments of bankers concerning the automotive industry, now that they are taking an active part in the financing of our opera-: tions. Gearge C. Roberts, the eminent banker who spoke at the S'cciety of Automotive Engineers' dinner during the annual meeting, discussed the "necessity of automobiles" in one sentence. He said, in effect: "The atuomobile has proven that it is a necessity because no man who has uwned one will now be without a car." Slowly the men who have power in financial circles are putting themselves on record in favorable opinions.


This is the ALBERT Touring
Model. 2 -seater, Coupe and Saloon are also fitted to the ALBERT Standard Chassis.

## The Leader of

Light Cars de Luxe

4-Seaters, 2-Seaters and Saloon Models just Arrived.

# CHINA MUTUAL TRADING Co., Ltd. <br> 20 Kiukiang Road <br> Sole Agents for China <br> Shanghai 

## SOME THRIFT CAMPAIGNS HAVE DRAWBACKS

Decrease in Value of Securities Causes Great Dissatisfaction

ACAMPAIGN is being carried on to induce manufacturers to institute thrift departments in their factories. In the main, the suggestion is that Liberty Bond campaigns be repeated. It has been suggested that different automotive factories enter into a competition to determine which can sell the largest proportion of securities to employees.

The disappointments of the Jiberty Bond campaigns are many. The chief consolation is that it was a matriotic effort. Whatever the results, they were justified by the cmergency. The bitter taste is due to tho market price of Liberty loonds since they were sold. lmagine what the impression would be of a campaign wats waged in a less worthy erasse. Some companies that last winter sold heavily of their own stock to employees on part-payment plans have had a serious time in explaming what hats happened, especially when it was meerstatry to lity off on discharge the purchaser.

But it would be at very fine lhing if every worker owned smas securities, or had aller megothable weilth. 'The idea of inculcating thrift is as splendid once, but we would proceed on low gear.

One man who is prominent in this campaigu has stated his reasons for favoring such a campaign very differently from the usual thrift promoter. He says that industry to-day neede moch money and that, becaluse of the surtaxes on incomes, this money is not going to be fortheoming from its ueval sources-the monied men and women of the country. Therefore, we must find new sources of wealth. The small saver is next on his list. So he shesests that calch manufacture would only be holping himald be inducing his emplovees to buy

Very geod. Thut can !ou assume ? lumalf w-day of all insestment that will remath of sutticicom batue for wom for ferommend it to the small and mote of lese mintormed
 Howits and to comemage sallinse, hat he should he ben sate-


 sameses.
 Ward with sulticiowl catlon

## NASH LINE WELL REPRESENTED IN SHANGHAI

Popular Six Cylinder Car Turned Out by One of the Oldest and Best Equiped Organizations in America


The Nash six cylinder, five
passenger touring car, one
of the several models now
on display in Shanghai

Considerable interest has been aronsed in mototing circles in China and particularly in shanghai by the elaborate plans that have heen made by the Wah Chang Trading Corporation, Shanghai, to extend the sales of the popular Nash line in this maket. The Nash, as is well known, is manufactured by an organization headed by C. W. Nash, one of the pioneers in the motor car industry. The company's plant, at Kenosha, Wisconsin, is one of the largest and best equipped, in the world. The Nash is a "manufactured" car thoughout, all the farts being made in the company": own plants.


Front view of the Nash Six
The Nash is a substantial and tynically serviceable car in several models. For those who require a car ready for the road and which is fitted with electric lighting and starting, adequate weather protection and comfortable springing, the Nash six makes an attractive proposition, particularly to the family man.

The 6-cyl. perfected overhead-valved engine is of sufficient power for any ordinary needs on the road, and the construction of the power unit is such as to render it ac-
(essilile, althongh at the same time all the working parts are adequately enclosed and lubricated.

With a bore and stroke of $3 \frac{1}{4}$ ins. by 5 ins the car comes into the medium-powered class, and its 120 -inch. wheelbase makes it large enough to be comfortable on rough roads without being unwieldy to handle in the garage. The engine and gearbox are built up in unit construction, the six cylinders being cast en bloc. Overhead valves are operated by push rods from an enclosed one-piece camshaft, which is driven by gearwheels from the crankshaft, and the push rods are enclosed so that the housings in which they work can be utilized as conduits for conveying oil mist from the crankcase up to the rockers for lubrication purposes.

The rocker gear is mounted on the detachable heads and enclosed in an easily removable cover, so that tappet adjustment can be quickly carried out when necessary, although any dirt which may cause wear is excluded. The six-throw crankshaft is mounted on three main bearings; and it should be noted that these are conciderably larger in diameter than is usual, which makes for long life. The crankshalt is, balanced in between the throws, and it is claimed that no whip or vibration is felt at any speeds.

The pistons are light but substantial, the skirts being $4 \frac{1}{2}$ ins. long, and providing ample surface to resist wear due to side thrusts, while the connecting rods are of drop forged steel, the big-end bearings being 2 inches in diameter.

An unusual and novel feature is the way in which the dynamo is mounted and driven. On the front of the cylinder block and in place of the usual fan mounting is a bracket on which the dynamo is fixed, and the fan is in turn fitted on an extension of its shaft. Thus a single Whittle belt serves to drive both units, and the dynamo is accessibly situated, while being out of the way of oil and dirt.

Lubrication is by an cil pump driven from the camshaft by spiral gears which feeds oil to the main bearings and into troughs situated in the path of the big-end bearings. The crlinder walls are thus lubricated on the splash system.

A centrifugal pump circulates the cooling water, and the surface of the radiator is large enough to ensure efficient cooling under abnormal conditions. Regarding carburation, the main air intake is supplied with a muff on the exhaust pipe, so that bot air is drawn into the carburetor, which greatly helps vaporization, and thus gives economy. Fuel is fed to the carburetor through the popular Autovac system, and ignition is hy battery and distributor, the current being supplied by a dynamo. A separate starting motor is fitted to work on the flywheel, and from the clutch. which is of the single-plate dry disc type, the drive is taken to the three-speed gearbox. The gear ratios vary from $4 \frac{1}{2}$ to 1 on high to $14 \frac{1}{2}$ to 1 on low. The lowest gear of all is reverse, which is $19 \frac{1}{2}$ to 1 .

An unusual feature for an American car is the fitting of a transmission brake at the rear of the propeller shaft. This brake is of the external-contracting type operated by hand, while the foot brakes are also external-contracting, working on drume mounted on the rear wheel hubs.

Of the semi-floating type, the back axle is made up of a wrought-iron center with alloy steel tubular ends. Following popular practice the differential gear can be taken out through an inspection door on the rear of the housing. No torque rods are fitted, the drive being of the Hotchkiss type in which the rear springs absorb the strain, and semielliptic suspension is used all round, the front and rear


Special lubricator for spring shackles

Fin and generator mounting
springs being 40 ins. and 56 ins bong repectively. I'o provide a low center of gravity the tear axde is underslomg. and the shackle bolts aro lubricated by oit c'mps, olviating the messy operation of greasing. A large steed tank on the rear of the chassis holds $17 \frac{1}{2}$ gatlons of gasotine, and $3: 3$ ins. by 4 ins. wheels are filted with detachable rims.

Central control for gears and hand brake is, of cousse, standand. In the coachwork ample aceommodation for the passengers is provided, the real seats bebing 17 ins. "ide.

Standard finish is in a serviceable grey with black fenders and valances, and the upholstery is buttonless and of black leather. The full equipment of the car includes a divided windscreen, extra rim and carrier, complete set of tools,


The Nash perfected overluead valve motor
and the usual instruments. The headlights are equipped with non-glare lamps and small bulbs for town driving, and the hood fits close on to the top of the windscreen, excluaing dranght. When in losition, the side curtains


The Nush Si.r Chenssis
On the toming modele open with the deors, of whech there are four, thas patically comenting the buring val into it weatherproof town car.

## WORKMEN GLAD TO GET JOBS AGAIN

Idlemess at the fictories has heen productive of anme new experiences. Idleness, as here used, is, of course, a



 bection foremen bave been actually put work on the machenes or at the bench, and the remathathe dhens 1 that where this has been tried thes like it.




 willing! remme the wh :attin! Sill hish of ill it me:mes


## INSURANCE

Fire, Marine, Life,
Accident and Sickness.
Fidelity Guarantee
AND
MOTOR CARS
Commercial Union
Assurance Company, Ltd.
Total funds exceed $£ 41,000,000$.
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## ELECTRO PLATING Co.

"MERCURY"<br>Electro Plating of all descriptions

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Automobile Wheels, Bumpers, Wind-shield Frames, Radiators and other bright parts nickeled and fully guaranteed to withstand the severe China climate.

## ALL WORK DONE BY FOREIGNERS

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Shanghai
Phore E. 183

## This Year's Styles in Automobile Body Design

(Continued from Page 24)
a comer in the metal it is not easy to adopt it to the closed. body ; also, the height of the body sides will vary on different open bodies, so that the adoption of the plan illustrated in Fig. 1 simplifies the designing and has a beneficial eftect on the manufacturing costs. The radius used on the corner id not arbitrary. The effect is most pronounced with a radius of about 1 l to 2 in ., starting at the radiator. But almost any radius is permissible, always provided that the turning line of the metal is parallel to the theoretical line D. Coincident with the hood and radiator as shown, the flat top edge with a slight radius to the outer edge has susperseded the bevel edge. The back corner of the body will be round, with a radius of from 4 to 6 in . ; the sides will be of the moderate height of 22 or 23 in . and the back will be high, for comfort when using the rear seat.

Other features that have come into use and that increase the commonsense usefulness of the open body are the more general adoption of both inside and outside door handles ; the use of rear top rest-irons that are taken off when not required; a superior quality of springs in the seat cushions, even in moderate-priced cars; higher hoods und. radiators that give the appearance of vigorous motive puwer and, by their comparison in height with the body side, help. to make it look lower. There seems to be a general tendency to use cowl lamps. The use of the sun visor has net been as general as it promised to be at one time.

The value of having the design of the mudguards, radiator, hood, lamps, painting and trimming in harmony with the body design is fairly well understood; in fact, these features are the most conspicuous in distinguishing the different cars. The mudguards on most cars today are suited for their purpose and sensible. The crown guard with special formed edges is always an evidence of expensive toolwork. The front guard looks best when made long. The rear guard is at its best when it follows the contour of the wheel well down and is just below the wheel center. The width should never be less than 10 in . and an 11-in. width is better when used with running boards.

The trimming design on both open and closed bodies has remained the same for some time. The straight or French pleat continues to deserve favor. On open bodies leather for the seat and back coverings and imitation-leather coverings for the flats and back of the front seat have been the nearest to economy that real service would permit. The use of robe rails is usual, but the foot-rest is used intermittently. The general plan for all bodies is simplicity. Even the closed bodies have less ornamentation than formerly and the omission of toilet or vanity cases and flower holders is common. One dome light and, at times, corner reading lamps, constitute the sole appointments ,except that the instrument-board may include a clock in addition to the


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# SHANGHAI 

## 2, WDOSUNG ROAD.

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J. W. DAVIS,<br>Gen. Mgr.

## FRENCH MIANUFACTURER TO INVADE AMERICA

Peugeot Plans to Follow Example of Rolls-Royce; To Locate in New England

Plans have been finally completed whereby the Peugeot Co. of America, Inc., establishes itself on American soil. Intimation of such action was first reported the beginning of last Summer with the incorporation of the new organization under the laws of Delaware. Detailed plans, however, were lacking at that time, it will be recalled, due to the many matters that had to be threshed out in the course of enabling the company to get a sound footing. With its finances now provided for it is now revealed that the new enterprise planis to acquire a factory somewhere in New England where it will produce a seventy-six horsepower car with a new type valveless engine now in use in Fiance and which is clatmed to give no less than fifteen miles to the gratlon of gatsolime.

The new company has an athorized capitalization of $\$ 30,000,000$ of eight-percent cumulative preforred stock ind
usual necessary equijment, making this bourd tho repositem? of practically all of the appomtenemts.

The use of the window littor is general for the doms of all dosed bodies. The ornamentation on the sitvered intorior parts is in botter taste and namony than formerly and the material for the trimming is more frequently selected for its durability than for show.
at present with 50,000 shares of common stock of no par value. The preferred stock is to have a ten-year maturity date, according to report, and interest and principal will be guaranteed by the Peugeot Co. of France. Of the total amount of 1 referred only $\$ 1,500,000$ is to be issted at once and of the common stock only 25,000 shates will be isstled for the present. Howerer, it is underatood that the authorized common stock may be later incerased to 100 . (0) (0) shares, of which 7 7i, 000 will be outstanding. It is expected that priblic: anmouncement of the new instue will be made in the nat future.

If possible the sew compan! paths to acture at plant somewhere in Xew Emgland. I'resem plans. Fows. Would indisate that the smaller models which hate betme the





 and comstration wook of the Ameritan comerprise. I'resent. flans call for the delivery to the liowhth orgamzation of any


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，oren Hotel
Each room with bath attached．Ten minutes from station．
Private Car for use of guests． Mrs．J．FARREL，

Proprietress．

## Frazar \＆Co．，Compile Another Road Map

 （Continued from page 50）＂The road is a military highway which was greatly im－ proved during the Anfu trouble last year．The good condi－ tion of the road is evidenced by the fact that our cars cover－ ed the distance of 115 miles in less than six hours running


Crossing river on pontoon bridge
time，averaging more than twenty miles per hour for the trip．

Great credit is due to Mr．R．H．Merrill of the Grand Canal Improvement Board who so kindly lent his services for this and also the Peking tour．He compiled the book－ lets and maps．
＇We are contemplating a run from Tientsin to Taku and another one to Tangku which is on the other side of： the river．
＂Yours very truly，
Paul L．D．Plath， ＂Motor Car Dept．＇＂
In making these varios trips out of Tientsin this enterprising company is doing a lot of good，not only for


On military lighway at Paotingfu
themselves and their immediate friends and clients，but for the whole motoring fraternity．It was by just such methods as this that dealers in the United States populariz－ ed the motor car in localities where roads were lacking or where they needed improvement to accommodate motor car traffic．The booklets that Frazar and Co．publish and distribute are in great demand among motorists in the noith，and the company has abundant evidence that the
booklets and maps serve a very useful purpose and do a lot of good.

Great credit, too, attaches to the women of the party, who are thus proving that long motor car trips in China are possible and that they may be undertaken with prospects of pleasure that outweigh their disadvantages.


Leaving south gate at Paotinufu
This is the kind of pioneering work that brings good resulte in the form of road improvements. Once people are induced to making these trips they become enthusiastic about the touring possibilities of their cars, and thus are converted into active supporters of the movement for better roads.

## AMERICAN DUNLOP FACTORY ALSO SLOWING DOWN PRODUCTION

The Dunlop Tire and Rubber Corp. of Buffalo, N. Y., has Iractically suspended operations, says a recent report, and at the office of the company this statement has been given out:
"The directors of the Dunlop Tire and Rubber Corp. have decided that general conditions in the automobile industry are such that they are justified in slowing down their rrogram until conditions improve. April 1 is the probable date of resumption of activities although it may be much sooner if the conditions justify, "

It has been estimated that approximately $\$ 36,000,000$ has been spent on the American plant by the company since building operations were started a year and a half ago.

THE ORIENTAL MOTOR IS ON SALE IN
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When comfort is complete and cost of operation at the minimum there is little more to be desired in a closed car.

The Sedan adds to these qualities, real beauty of design and excellent good taste.

The gasoline consumption is unusually low The tire mileage is unusually high
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 Vietomia lowk, and locment in the Combe of thi lowne I te mad Business.

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Attesian Well 2in fo. deep?
 Cable Address "ASTOR"

THE: MANAGEMENY

## Vast Amount of New Building is Sure Indication of Shanghai's Faith in the Future

## (c'ontinued from Pagr 11)

in the wonld, working on a Kipling's seven league canvas, couldn't have pictured for them an advertisement that would carry as much weight as their new building on the bund.

Hut. no one in shanghai ganges them any good that they will get out of their advertisement, for they are build-


Nere Flome Mill on Sooclom Creeli
ing a momument to Shanghai as well as to themselves. In words of solid granite they are writing a testimonial to their faith in the city, and to their faith in the Orient, with the result that there isn't a person within a thousand miles of the structure but who will benefit from it, directly or indirectly

At the other end of the bund the Hongkong and Shanghai bank, judging from appearances, is going to erect a structure that will be thoroughly in keeping with that great


A Corner of Namyang Bros. neu furtory
financial institution. Already a flock of derricks pierce the skies, and what with pile drivers, electric concrete mixers and the like one has no trouble in fancring, while watching operations there, that he is in Sondon or New Ycrk.

Those of us who live in Shanghai miss, perbaps, the significance of such works as these, particularly in the timess in which we are living. In newspaper despatches from all over the world we read of unemployment and business
depressions, and here in Shanghai it is a well known fact that salesmen are not suffering from writers' cramp contracted from signing orders for merchandise, but it is well, in the midst of these rather gloomy signs of the present, to turn our faces occasionally toward the future, because it is in thic future that most of us will spend a large and im. prortant part of our lives.

Sid nothing so clearly indicates that the future is bright as the large amount of building that is going on in and acound Shanghai. These buildings are being erected and paid for by business mer who know Shanghai, and who know China. They are men who have lived through the strees of $1^{\text {yevions }}$ lusiness storms, and who know how to


New Building in French Concession
discount them. They know that the present depression will lift and that business will go on, in increasing volume, in this part of the world. If they didn't know these thing they would not put their money into solid substantial caildings of the sort we see on every hand. If they were hot convinced that good times are just around the cornet they would install their desks and filing cases in tents or mat sheds, in order to be ready to decamp on short notice,


Chartered Banls's new building
as $m \in n$ ao when they build a town in the vicinity of a new oll gleher ur mining camp.

One of the poets has said that there are sermons in stones and trees and running brooks, or something to that effect, but there are finer sermons in the magnificent buildings that are going up in Shanghai, and all that any of us


Tel. C. 1447

## SHANGHAI

TIENTSIN_——PEKING__HONGKONG

## GASOLINE STOCKS IN U. S. SHOW INCREASE

No Fear of Shortage Says Bureau of Mines Bulletin

Report of the American Bureau of Nines, covering refinery activities for Novenber, 1920, show: little change in comparison with the immediately preceding months. Total gasoline production during November vas 452,642,125 ghillons and the stccls on band at refincries at the end of that month were $354,8: 35,282$. Stocks are stadily being built up and fears of a gascoline shortage in the new future are apparently misplaced. It is interesting to note how the stocks on November 31 compare with stocks at the time of the "gaaless Sundays" in 1918. The November, 1920, stocks of $354,835,282$ gallons show an increase orer stock is as of August 31, 1918, which were $285,445,538$ gallons, amounting to $69,388,744$ gallons or anmoximately 25 percont.

Gataline production for the last three monthe for which riports have been issued compares as follows: Xommber,
hive to do to to encouraged is to take note of them, and to seef, faydk of them, the conviction in the minds of the men Who are paying for them-keen, batanced business men, overy one of them- - that shanghai is "looking fonnard."

1920, 452,642,125 gallons; October, 1924. $4(53.54, .745$ September, 1920, 453,891,096. Stocks compare: November, 1920, $354,835,282$ gallons ; October, 1920, 301,283,731;
 in cpeaticn dusing Norcmler was six less than during October, the former number laing :3 26 . Inaily aremge of crude oil run was $1,698,29 \mathrm{j}$ bamels. which wats :m inctomec of 1,350 brarels daily capacity.

Total gavoline production for November was slighty lese than for Oetoles, but owing to the shanter memble, whe November average daily production was slightly higher.
 000,000 gallons. In November, 1919, stocks incrensed but
 Wat month was 23, 29? (0) (5) wallom: latser wan at the itse of November, 1920.

 October, 213,742156; Scptember, 199, 1-40, (024. Stocks at



## THE NEW

# THE FEI LUNG COMPANY <br> THE FEI LUNG GARAGE Co. <br> HIRE SERVICE, $153-4$ Hupeh Road. Phone C. 4133. <br> SHANGHAI AUTOMOBILE Co. 

Our Bubbling Well Shops are fully equipped for Body Building, Painting and Overhauling.

## DON'T OVERLOOK THE ADVANTAGES OF GOOD WINDOW DISPLAYS

British Retailer T'ells How to Make Most of this Important Feature of Garage Business

1I is generally agreed, by those who travel up and down the country, that a great deal of business is lost to the motor trade by a failure effective window display. This is particularly the case in regard to the trade in accessories, which only too often are either not displayed at all or are in too many cases jumbled in the show windows. If a thing is worth doing it is worth doing well, and, therefore, if it is worth while putting motor goods in the shop window it is right that this should be done in such a way that the maximum advantage will be gained by doing so. Other trades have learned this lesson long since, and the periodic sales seasons-one of which most trades are passing through just now-are tremendously aided by the judicious dressing of the windows that are resorted to, not merely by the big department store, but by the small suburban or provincial country shopkeeper.

Why, then, should the motor trader, eapecially the man who stocks accessories, neglect this most important and profitable selling aid? Unfortunately it is only too true that such neglect exists.

The firm of Messre. Munn and Underwood, of Southampon, a leading firm of motor traders in Hampshire, have for some years mado a special feature of the sale of miscel-
laneous motor goods and accessories, and Mr. Walter Munn, the senior partner, recently gave a "Miotor Trader" representative his views on this and the kinderd subject of window dressing. As one who for thirty years has studied the art of window-dressing as another department of advertising, his views should be of great value and interest to other traders.

Mr. Munn considers that the sale of accessories is largo ly affected by the display made in shop windowe and that the proper use of windows should be a primary consideration, for, although all firms possess a frontage on the street, they do not all realize that its value depends upon the use made of it to show goods for sale. A shop window is, if they but knew it, a cheap and effective means of advertising.

To attract the interest of the public, in Mr. Munn's opinion, it is essential that the windows and goods should be as clean as possible, and that in the order and arrangement of the latter there should be balance and color. A neutral background, such as a black curtain, is desirable when bright goods are to be shown, and in order to display the accessories to the best advantage glass shelves and brackets (such as are used to show plated articles in silversmiths' shops) are the most suitable.

## Proper Tire Sizes is Important Question for Motorists

(Continued from Page 40)
then clear out. For a manufacturer who has a big invostment in building some plant it would be suicidal. Conscquently, the tire manufacturer, under such circamstances, does not onjoy his temporary prosperity. He knows that it is leading the dissolution of his goodwill.

The chansis manufacturer, for reasons already indicated, perhaps feels the bad effects least of all the three. He can at any rate put up a case in his own defence if his vehicle does badly, bocause the purchaser persisted in using unduly emall tires which did not properly protect the mechanism. Moreover, if the driver finds that his small tires make it very uncomfortable to travel rapidly, he may maintain somewhat slower speeds and the chassis consequently may not suffer. On the whole, however, it is good for the chassis manufacturer that the car as a whole should give good results. Many poorle regard the vehicle as a whole and are disposed to blame the chassis manufacturer for anything that goes wrong, even with a part that he did not build.

Now as to the cost of undertiring there are two opinions. Tire manufacturers sometimes maintain that chassis manufacturers are mainly to blame, but, as already suggested, the chassis manufacturer is driven to adopt a certain policy by reeson of the demands of his clients. If he has to cut down his total price to a figure which is really too low he naturally skimps the fitting and accessories which he does not make rather than the portions of the vehicle for which he is immediately and beyond doubt responsible. Thus be is induced to fit unduly small tires and perhaps in come cases to advise that they should be large enough. Undertiring is bad enough in a country like England; it is infinitely worse in countries where the heat is greater and the roads of warse quality. A great deal of heat must always be generated where the tire rubs upon the road. The smaller the tire the higher the temperature rises in a given set of conditions.

Frequont changes in the goods displayed and in the arrangement of thom are vital to stimulate the interest of plasser-by, and it is essential that the window should not be overcrowded. Each article should be pliced so that it can be clarly seen. Too many varicties should not lee included in one window, nor should they be of different classes, it boing paeferable to devote a whole window to is single line, such as cloming materials, lampe, maseots, took, oil or vulcanizors, for instance. ('are should bo takem, however, to aboid attracting attention to the colour and form of the display rather than to the groods themelves:
"Reason-why" tickets-that is to saly, timeles telling the publice the advantages of the sionts offered for sale, are, in Mr. Mumn's opinion, ons of the most important points in effective window-denseme. and the price must be clearly shown.


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or WHEELOCK \& Co., French Bund.

## ROAD MAKERS HAVE WIDE VARIETY OF GOOD BUILDING MATERIALS

Asphalt and Corcrete in Race for Popular Favor-Repairing is Factor of Great Importance

Now that there ale seteral organizations in China that have for their prume the creation of a good road system it will not be amiss to look into the question of what con$\therefore$ :tutus dle lut material for building these proposed highways, particulaly those that are to be used extensively for motor traffic.

In order tlat notor traffic can properly develop and thus attain to its greatest efficiency and economic value, it is recensory that ronds be constructed which are suitable for it: use. The more of such roads that exist within a country, and the better the state of repair in which they are kept, the greatcr the areas from which products can be disr tributed ; in consequence, the greater the volume of business, and the greater the prosperity of the community.

There are various factors that enter into the choice of material for constructing the surface of a road. The character of the country, the amount of labor available, the facilities available, the materials that are most readily olitainalile, the amount of money that can be spent-these and other things must have a good deal of influence in determining the kind of road surface that is to be constructed.

The types of surface that are in general use are as follows: Treated gravel, treated macadam; bituminous macadam, aschalt block, cement concrete, bituminouscovered cement concrete, brick, stone block. All of these have merits and demerits, and some are more suitable for one location, and some for another. It will perhaps be interesting to note the characteristics of some of these types of paring, as exemplified in America and England. In these countries motor traffic is highly developed and much experimenting has been done with road surfaces.

In most cities wood blocks, granite setts, and bricks are in use as street paving, but asphalt predominates in the residential sections and in the chief business thoroughfares. Gaanite setts and wood blocks are used to pave the approaches to wharves, docks, railway goods statione, and similar locations where the traffic is heavy and slow-moving, For ordinary rads, however, the granite setts are very objectionable for ordinary automobile traffic.

The wood block pavements are made of what is known in America as Douglas fir, but what is called Oregon pine in many other countries. The pavement is laid and bound with tar. It is satisfactory for aime; but is prone to develop holes and hillocks in protracted wet weather owing to the swelling of the wood.

The materials that are most favoured are sheet asphalt and bituminous macadam. That the former wears well when in use for motor traffic is evidenced by the fact that Fifth Avenue, New York, is paved with it. All day long fast and heavy motor vehicles, including a great many

## the GOLDEN HORSE CIGARETTES

## A SMOKE <br> YOU WILL LEARN <br> TO LOVE

AS SO MANY<br>CRITICAL SMOKERS HAVE

BEEN CAPTIVATED BY IT


# NANYANG BROS. TOBACCO COMPANY., Ltd. 

Shanghai, Peking, Hankow, Tientsin, Canton, Hongkong, etc.

buses, stream over it, but it continues in good order without extraordinary reqairing.

Brick paroment has been used, but if laid over a concrete foundaiion upon a cand cushion the bricks soon become uneven and unsatisfactory. However, when laid directly on the concrete and grouted with cement, brick paving is very satisfactory, particularly when speciallymade, hard bricks are used.

For cross-country roads bituminous macadam or cement concrete is usod. The first is compased of crushed sitone nixed with hituminous material. It is mixed hot and laid hot, being relled until homogencous. Such a road is hard and dustles:s, is rapidly constructed, and is ready for use ass soch as completod.
('onsiderable lise has beon made of sement concrete. The fomdation for this type of road must be absolutely fiom and rigid. If this is the case a concrete road is well satited to motor traffice, but if not the excessise shathes set up will very soon brak it up. A rich concrete mixture is lused and is laid to a dopth of from seven to nime inchew. It is surficed with long-handed rullers, phesed from side to side of the road, or liy a belt worked from side to vide in a simblar mamer, after being shaped with at complate. Any cracks that m:y ocelle on aceotme of shrinksige or uneven expansion ate filled up with liguid tar to prevent their edges from breakinge, and do not catlec any tronble.

A concrete road has varicus advantages. It has a low first cost and low maintenance cost; the materials from which it is made are widely distributed and of common occurrence; it can be constructed with a mininum of skilled labor; it has an even surface, offering little tractive resistence, but providing a good gijp for rubber-tired wheels. In addition, rain will not wash it atray nor make gullies in it, so that it can be latd with rere little cam?

Water-tound macadamized leads ate bot rery sutables for motor traftice, as they soon fall into dis mphatr, partienlarly in wet woather. Heall rams will baphly disinteratat roads of this type. Macadamized wads hate the additional
 and wery moddy in the wed sebemen.





 gocds In the railway and to arm monhamdi- from point to print where the balway does mot tum.
'Ther is unly che thing wrone "ith at lakinge tim fimme. It moeds a new wa:her, of if the washer is only hatwened, it weds it litth embening with meatsfoot oil.

## THE NEW 11.9 BEAN

First of the British "maas
production" cars to
appear in Shanghai


The new 11.9 Bca.2 car, Coupé Model
Among the Poplar Engli-h arar- in Shanghai, e. as ially in the maditm price clase, is the leen, hepresented lote by the Anglo-Chinese Engineers' Association, Ltd., a subReise and Co., (Reiss Bros. Ltd.). In addition, Mr. F. S. Sole, is the special Factory representative, in charge of the Far East, and is looking after the company's interests here. Incidentally, Mr. Sole is also the pecial factory representative for Smith': Accessories and Tiiumple Motorcy:

The Bean motor car was the successor to, and is the off-ping of, so to prak, the original deservedy popular 11.9 h.p. Perty. Its manufacturers, Harper, Sons and Bean, Ltd., were amongst the first of the British concerns to tackle the quantity production of cars on a serious and workmanlike scale. Erer since the date of the Show remarkable strides have been made in the reconstruction of the works at Tipton and its equipment for automobile production on a large scale, and cars are now being turned out in large numbers.

Tlat this is a fact is obrices to even the candel cleerter. who can now see for himel! incruating numbars of thee


The chassis of the new
upholstered, and there is a sufficiency of leg room, which is all-important on long journeys.

The engine of the Bean car has its four cylindore cast monobloc, the bore and stroke being 69 mm . by 120 mm ., with both inlet and exhaust manifolds on the near side of the engine. Accessibility of the power unit is, perhips, its most noticeable feature, the disposition of the various components having been well arranged. A Zenith carburetor is fitted. The magneto is driven by the timing gear silent


The 11.9 Bean engine
chain. An electric starting motor of accerted type operates on the rim of the flywheel, in which is housed a cone clutch. The gearbox provides three forward speeds and a reverse, and is slung on a substantial subframe, the drive to the rear axle being taken by an open propeller shaft fitted with two universal joints, leather cased. The final drive is by helical


Back axle, universal joint and brake operating rods
bevels, and the rear axle is of the full feating tope. Smiclliptie springing is emplosed all round, an: 1 Hh hathe atre componsatod and work inside drmms on the real wheets:

The Anglo-chinere Fingincer Acw. Lid., viry the
 toming and extle models. 'They alwo hate a fax late chasis for those who preder to build th.ir own loflime

## MILLTR TIRE SALES INCREASE

Buying autcrobile tires is like buying eggs. All look very much alike-the bad ones look as good as the good ones, and the "rc-name" tires as well as the product of which any manufecturer may well be proud.

The "no-name" tire may have all the beauty and symmetry of the nationally known tire and yet be made out of shoddy. It's not reasonable to bolieve that a motorist can cict a tive "just as good" as a standard make for balif the price.

The car owner who buys bargain tires is like the woman who bought a dozen eggs from a "friend": at 10 cents below the price her groceryman quoted. When she broke the shells, four of them were bad, so the eight good eggs cost her more than the groceryman's price for twelve good eggs.

In tire mileage, it's not first costs that count but costs per mile. Adding the cost of repairs to the purchase price and dividing by the mileage, will quickly convince even the most confirmed bargain hinter.

Cost comparisons personally concern every buyer of tires. One of the "Big Four" manutacturers of tires has not only maintained "before-the-war" tire mileage prices but actually reduced mileage costs 44 percent. Within three years this company has also increased its mileage 115 percent. It is only natural that Miller sales have increased 500 percent since the pre-war period.

## FEWER HORSES IN CHICAGO EACH YEAR.

Viewed both from a commercial as well is a pleasure standpoint this is an era of motor transpertation. This forms the opinion of William H, iesbey, city collector of Chicago, who basos his belief on the yearly decrease in tho number of horsedrawn vehicle: in that city as evidenced by the comparative statements of the number of vehicle licenses iswled during the twelve months ending Ipril 30 . 1020, and the eight months folluing, with the incesatio inseribed as being aproximately the same at it wos lat year over the yeal precdeng. This will b: further appreciated when it is considered that in 1914 licanses were issued for 51,942 horse-dratw wheless of all whese, whereat after May 1 of last ram licenser were fiswed for only 26,389 lowsedrann whicles of all chatere


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## BRITISH EXPORTS FOR YEAR SHOW BIG INCREASE

## Volume of Imports Reveals Big Home Market if Manufacturers. Will Only Grasp it

From the British Board of Trade Returns it is noted that 1920 British exports of cars and commercial vehicles have increased more than threefold compared with 1919. The figures, in fact, constitute an easy record. Including chassis and paris thereof, the values are represented by the following figures :

| 1913. | 1919. | 1920. |
| :---: | :---: | :---: |
| $£ 3,649,891$ | $£ 2,596,932$ | $£ 8,390,742$ |

To the above totals the value of British motor cercles and parts exported may be added, viz.:

| 1913. | 1919. | 1920. |
| :---: | :---: | :---: |
| $£ 950,599$ | $£ 899,177$ | $£ 2,340,557$ |

Thus both the car and motor cycle industries have set up records during 19:20, and have assisted matelially in - showing a much better overseas trade batance for the whole country.

But if Rritish exports show so marked en increase, imports of forcign made cars during 1924 are simply stupendous. Touring cars and chassis, including commercial vehicles and parts imported into England, were represented by the following figures:

$$
\begin{array}{cc}
1913 . & 1919 . \\
£ 4,853,360 & £ 5,1: 0,835
\end{array}
$$

The figures last quoted may, at any rate, give en: couragement to the home manufacturers who should realise the vast field open to them in the United Kingdom alone. In the main, foreign cars are not imported and bought by British motorists becanse they are preferred, but largely because their price is attractive, and this despite the tariff of $33 \frac{1}{3}$ percent imposed upon imported cars.

The total number of touring cars and commercial vehicles exported from the United Kingdom during the year 1920 was 5,325 , while 1,514 was the aggregate total of the same type exported during 1919, which shows an increase of 3,811 in one year, though not attaining the pre-war figure for 1913 by 2,270 , the number for that year being 7,595 . America is undoubtedly the most formidable competitor, and it is certain that her rroducts form the major portion of motor imports into the United Kingdom.

During 1920 3 3,343 complete touring cars and commercial vehicles were imported into the United Kingdom as against a total of 4,365 in 1919, showing en increase of 28,978 in one year, this being 26,523 in excess of the last pre-war figure, which was 6,820 .

The Board of Trade returns show that the total value of the imports of complete touring cars and commercial

## TRAVELING REPAIR SHOPS IN ENGLAND.

The Associated Equipment Co. (Inc.) of Walthamstow, London, E., whose fame was largely made by Sam Wallace, production engincer there during the war period, and now chief director of the Wallace truck interests, has started a truck service plan which is making good and earning favor by rapid renovations of A. E. C. trucks when in trouble.

The company has six traveling repair shop trucks covering the whole of England and Wales. Each is allotted a territory to tour in, and carries a stock of replacement parts and workshop plant. When a breakdown is reported the district repair truck makes for the spot and the job proceeds until finished. Some rocord times are reported for such jobs as engine overhauls.

Charles King, who from 1910 on has been midely known in American aviation circles as an expert mechanic and guardian of many noted rilots and ships, has just launched a unique rent:ure-nn airlinne garage. It is one of the first of its kind in the United Stestes. It will be a real service station for cir tourists, dealing in ghs, oil, etc.. with facilities for repairs and for overhauling engines. The motio adonted is: "Drop in on us any time-everybody welcome."
vehicles for 1920 , which, as already stated, numbered 33,343 , was $\mathfrak{£} 10,490,012$, while the value of the British exports of the same types of vehicles, numbering 5,325 , for the same poriod only amounted to $£ 3,929,455$. Our exports are therefore less by 28,018 cars, valued a.t $£ 6,560,557$, than our imports.

In the matter of tires and parts the situation is somewhat similar, for the value of tires and parts exported during 1920 was $£ 8,487,171$, showing an increase in value of
 wes £2,082,436.

The imports were, and, of course, are still, kept down by the $33 \frac{7}{3}$ percent import duty imposed during the war, and by the fact of the American exchange being against us. Nevertheless, America, though unable entirely to meet her home demands for motor vehicles, has been able to do so to a much greater extent than the British makers have lieen able to supply the needs of their commtry. Not only: so, but America has been able to spare cars to export to other countries, including (ircat Britain, and thus to keep in touch with her Overscas markets, and even to open up new ones. 'This hitherto comparatively favorable situation for America has been homght about by the fact that America's resources were not exhansled by the war to the same extent as were those of (ireat Britain and other Emppean countrics.

Tho say, howeves, that this is the only pint in which the adventage lies with the Inited states would mot be in tell the whole story. An cqual, if not greater, alvamben
 mase production methecks, to which the Rritish imdustry Wats a comparative stranger until recently


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## NEW YORK CITY SALES DOUBLED IN JANUARY, FOLLOWING THE SHOW

Upward Trend Steady and Dealers are Confident that Normal Times are Approaching

JANUARY showed a slow, steady upward bending of the sales curre in the New York city district. With motor car sales showing a gain over December of 50 to 100 percent, territorial distributers are convinced that they have "tumed the corner" and that there will be a gradual resumption of buying to a point probably within 50 percent of last year's abnormal figure.

Nobody is making extravagant claims for spring. They realize that the January sales record contains the New York show inpetus, and that the succeeding months will have to s.tand on their own legs, aided slightly, perhaps by the closing of show prospects.

New York's greatest encouragement is the optimistic reports from the smaller dealers of the territory. Wholesale orders were particularly good following the show and the weekly reports of sales indicate a decided weakening in the buying apathy in the territory. Aggressive selling of the past two months is having its effect.

Truck distributer feel somewhat encouraged, but have experienced very little increased trade. The truck business is described as "spotty" which is taken to indicate that it is reacting to the resumption of business in various industrial lines.

With the settling of the weather and the beginning of tuilding operations, which are expected to open on a fairly large scale, a decided increase in the sale of trucks is expected.

The weather and the resumption of spring business is also a factor in the consideration of spring business by the passenger car dealers. It is felt now pretty generally that the breaking of the mild winter to date by a heavy storm may postione the actual opening of spring buying a week or tro, but it is too late in the scason to have any offect for a longer period.

## ANYBODY CAN BE A MOTOR MAGNATE.

Thanks to the parts maker, the pages of automobile design are an open book, and by consulting its pages anybody can build a car, and build it almost as quickly as he will. One well-known consulting engineer, for example, reccived an order for a new design for export to one of the Scandinavian countries. He opened the book and consulted its pages, ordered a set of parts and a very limited bill of materials. Two months later the stuff was all ready for the assembling of the " model" car. With tho aid of a garage mechannic and a clerk, the engineer put it together in three days' time. And it ran all right. The art seems to be not in simply building an automobile, but in building one that is so much bettor than any of the others that it will be conspicuously desirable. They are still getting fabulous prices for such.

## TOLEDO SHOW OUTDRAWS SOUP KITCHEN

One Day's Attendance at Exhibition More Than 21,000

When the Toledo automobile show opened the newspapers gave it a big story on the front page. That was wonderful. But elsewhere on the front page the headlines told the world that the mayor hod opened a soup kitchen for penniless unemployed. That wasn't quite so wonderful and 1here were some lamentations in trade circles.

The soup kitchen stayed open. So did the show. And the show drew the greatest attendance in Toledo show history, with 21,000 porsons inside the Terminal building one dey and with the congestion enforcing closing of the doore before 9 o'clock on three nights. The show sold cars, too, in sufficient numbers to give the dealers real encouragoment.

But what has happened sinco the show is more important. The soup kitchen, which got national attention, proved to be largely a newspaper creation. It was nothing but a little more than normal activity at the municipal lodging house for homeless men, not at all a place from which food was taken home to starving families. Tlere are unemfloyed and assistance for some of them will be neccssary for some time. But the number of unemployed is stoadily, though slowly, growing smaller as a rosult of gradual increases in the operating schedules of manufacturing plants.

Dealers are making some sales for immodiate and more for April delivery and while dealers out in the territory of ton to thirty counties tributary are taking only a few cars at a time they are not standing still. One helpful factor is a moderation of the severity of bank demands. Banks which for months had been demanding 50 percent down and the batance in six months on time sales, are now accopting 40 forcent down and giving eight months time.

Credit and used cars remain the big obstacles to sales all through the territory, as elsewhere in Ohio. Thero is no more bank discrimination against the industry, but financial houses simply haven't the money to loan on account of their investments in frozon industrial and agricultutal inventories. And accoptance corporation rates are so high that dealers and their customors are protesting. Jowerer the bank siteation is: leeter, with factories getting into production agan and with farmors, on the eve of the plating season, letting go seme of the crops that they were holding. houing for highor pricos.

Some dealers are losing sales overy day hecanse they won't aecept used cars at ownors' figures. In fact, execpt where a present owner wants a second car, it is next to impossible to make a "clean" sale. Dealers are leoking to the manufacturers, yomingly if not hopefully, for some mational "sohtion" of the used car problem. In the meantime they are doing the bert they can, their salesmen aro working hard and they are confident of a pretty good business year.

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# MANUFACTURERS SHOULD CONSIDER WORK FOR IMPROVEMENTS IN DETAILS 

"Little Things" Count Heavily in Winning the Lasting Good Will of Motcrists

Tittle thing:" comet heat il! winmong the lat ing good will of motorists.

Fortmately for metre (al owners, the mather"ture:


 be a :att: fiction or at misallice of it. owner. Equally manfortunately, Hate all remains a tremendous lot of room for adtancentent in this particular.

Every motor car owner has wondered, at times, why the manufacturer didn't add some obviously important inprovement which the veriest tyro could see the need of, and while the makers have had to draw the line somewhere it get remains that they have bean negligent in a great many particulars, and that they could have put on a number of little things that would not have added anything to the cost of the car, and which would hare gone far coward winning the good will of the motorists.


It is largely a matter of dewign-or doing the same thing in a different and better way. A great deal of attenitimon has been given, for instance, to the matter of "cleaning un" the bodic:-thot is, in removing :ll mmeremer obstructions and strasethtening out the lines so that extemally the "an wend lave a clean. smooth and meat :rypearance. And yet in many instances the effect of all this has been spoiled by failure to "clean u," the underside of
 improved or changed to any extent since the first motor car was built, and they still hang down, to catch mud and hold it. To the lay decern it woald like even an ordinary designer could fix up some sort of a bracket with smooth and sounded exterior which would hold the el rings and let go
of the mud, or at least part of it. The same thing applies to the gean horsiness in real axles. In practically every (a) those atc mighty belt loges that could be hidden if only : little thought were given to beauty of design as well at: to utility!.


For a ceca mary yours the manufacturers great problew has been to keep pace with the demand, to get out the cans that people with fists full of money wore waiting in line to grab up. Conditions like that do not encourage the making of tho best article. The engineers have enormously improved the big things in their cars. In getting the wonderful performance and amazing reliability of the modern automobile as compared with its prototype of even ten years ago, they have been kept more than busy. They were encouraged by lovd-roiced demand for these intporements and equally vigorous applause from the great

It should not be
necessary to " get
out and get under" to drain the crankcase

motoring public for their achievements. Today the factories are less bust than many of tincm have ever been; there is a breathing space. Engineers are thinking of innumerable
little things which would go to cut out the service station, end to make cars far more $1^{\text {lcacurable }}$ to use. Always, however, when engineers want to improve production men oppose "changes" with all their might, and if the engineer's ideas are not strported by a recognizable demand they are likely to be thecwn in the discard.

A ecently announced European car has a connection between the crapkeso and the steering gear so that the l:tter gets the Lencit of the oil splash in the engine. If this is going fulther than necessary, the car user might at least ask for a "ligg" lubricator through which transmission oil could be foured into the steering gear cocasionally.

Taking the sriasher guard of the front fender, this is usually bent inward and bold to the frame by a row of comn:on irca stove bolts-often without lock washers. Of course they loosen under the constant vibration and wracking, and if a dubler filler strip is put between the gunrd and the frame this dries up and peristhes, which makes the loosencss worse than evor.

There are two casy ways of curing this. One is to reinforce the edge of the guard, provide the reinforcement


Four suggestions for improving chassis detail
with three or form lugs or pregections so that it will only
 decent-sized bott throrgh each point of: contan't. This allews the guad and the frame to weave independently and eliminates chafe.

The cther methoed is to bead the calge of the ginald over at stiffening wire and clip, it rigidly to the femden irons. 'Thes beated edge of the givad then comes elowe to the brame within an cighth of an incth, hate doess not influall? tomed it and is mot actually attached to it. Fitm , ockets for the fender ioms genetally are used, and with this design they
are all that is needcd to make a squeakless job. Also if the fender ever has to come off for any reason, the labor involved in detacbing it is cut in laif.


Another sart of trouble is inaccessibility of adjustments. Fiom timo to time adjur.tments must he made, of course. For instance, the modern, very light-acting clutch, which is sweet to hendle and makes gear chifting io easy, is naturally a little more delicate than the grabbing brutes of a few fons ago. To keop its pelfection of action it needs taking up sometimes. But lot o.s. lock at what has to be done to adjust it. First we pry up the covering of the toeboard. Then we remove four or six tight wood screws so placed that the steering post, the podale or the sides ci the cowl make it a contortionist's job to hold the corewdriver. After juggling the beard out of the body and plentifulls: smearing grease over the front cushion, we are rewarded by the sight of a cover plate held by some half dozen screws to the bell housing.

The mocial is that the floor loards should le held in flace liy digs or lather instand of wood wiews. The were plate on the bell housing should be likewise clipped in place of have a crese clemping lar with hot a single bole to howd it, ard, last hut bat leat, there should be a trouble lamp with a good lingth of whe ale an integral pate of the cat.

This salbeet could bemested alonst imberimitely. Manufactumets will do uncll to consider these point-, becallisi the day is pate when ally old thing will do.

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## Engineers Promise Greater Fuel Economy (Continued from page 28)

Even a slight investigation would show these services conclusively.
"line fact that the passenger car is a factor of equal cconomic importance is not so easily demonstrated by statistics and this perhaps accounts for the feeling that the passenger cor is a luxury, although the car passed out of that condition at least six years ago. A recent questionnaire sent cut by the National Automobile Chamber of Commerce showed that 90 percent of all passenger cars are used more or less for business purposes and that more than two-thirds of the total mileage run by passenger cars is for business.
"So the utmost that can be charged against the passenger car today is that it gives pleasure after it has done a full day's work. The questionnaire brought out an even more startling fact that the average motor car owner increases his earning capacity about 57 percent through its use. The value to the farmer has been shown time and again and altogether no doubt can remain in the mind of any candid man who investigates that the automobile is far more than paying its cwn way today. In addition, of course, are the great intangible values that the automobile is giving -its contribution to comfort, pleasure and health.
"Yet these prejudices have already seriously affected the automotive industry and it has been shown they threaten its future even more seriously. Although not a problem in engineeting, this condition is a matter to which members of the S. A. E. should give most careful attention and in every way possible the Society should bring home to America the very ligh value of the Automotive Industry.
"The handicaps upon the industry which are peculiarly within the province of the S. A. E. and which must be solved before the automobile can render its full service to this country fall under three general heads: ROAD CONSTRUC'IION, FUEL AND COST.
"Studies that have been made during the past year have contributed greatly to our knowledge of the effect of vehicles on the roads. We have learned how much road surfaces can be saved by increasing the proportion of sprung weights to those of unsprung weights in a truck. We learned a great dcal regarding the amount of load that should be carriod per square inch of bearing surface of tires upon the road. Care should be taken to make certain that these lessons are applied to the fullest extent in the manufacture of vehicles and in their loading so as to lighten the task of the road engineers who are attempting to solve the problem of constructing surfaces that will withstand modern traffic.
"The second great engineering prablem which confronts the industry has to do with fuel. We have now for some years seen an increasing cost of fuel together with decreasing quality, indicating that there is a real shortage and that the demand foï gasoline has outstripped the supply, long before that demand has reached the volume that it will when the internal combustion engine has been adapted fully

## COMPETITIVE FUEL TESTS WOULD HELP INDUSTRY

Such a Contest Would Show Weaknesses ia Engine Design

There are indications that a well-organized road test in which suitable prizes would be awarded for the cars that make the greatest mileage per gallon of fuel would attract many entrants and wide engineering as well as popular
to the world's needs. Unless the cost of fuel can be considerably decreased and its quantity considerably enlarged, we are not far from the time when industry will have to cease its growth with a good half of its work still undone
"The solution of this problem will need the cooperation of three partics. The oil industry itself must expand as rapidly as possible, replace antiquated refining methods with modern, and practice conservation to the limit. The puldic must be educated to get the maxium amount of mileage out of every gallon of gasoline but chiefly wo antomotive engineers must revise and improve our designs in order to get every ounce of power posisible out of overy drop of gatsoline.
"The fact remains that we have not begun to approach the high gasoline mileages obtained with typical light Litropean eass. The reason for this lies in the demand of the public for cars which will ge pactically anywhere on high gear and which will have a very high sate of accoloration."
interest. Such a test would, of comrse, have to be rim under carcfully drawn rules which mould take into somsideration the size and load of the car, and would, to be of greatest value, have to be run under carcful supervision to prevent freak methods of driving which no one would consider following in the nommal use of a car.
some manufacturers, especially those who builat cars with wir-cooled engines, consider that they ate in al allse by themstes when it comes to getting maximum finel economy, but there secms to be litte dembet but that a well-designed water-cooled car of equal weight could equal if not surpass the performance of the air-cousted car, for it should be able to operate with higher comptescion ratio. and pertapse a better lowed factor than the wher Wre "hiles with proper eontrol of water tomperatume the evtinder watls med naw be unduly cool.

However this maly ho, mbder intedligent mas there is oppertmity for a competition that would pore instructive. and thononghly worth white such te: = at he:s bring out pasibilities or cetablish meskes at which to ame in commercial patatice. Whatewer the ardertisime value might
 ing stimulus that shmuld rente.


## CIVIL AVIATION MAKES BIG STRIDES IN ENGLAND

## Gnat Increase Shown in Number of Machines in Use and Passengers Carried

Thring the six months betricen April 1 and Sept. 1 a total of 689,600 machine miles wero flown by Britisb civil aviators, a large increase over the mileage of the preceding half-year. The numbe: of passengers carried has also increased, the figure for the period named being 32,345 . The number of departures and arrivals to and from England and the Continent has increased from 734 to 2,445 .

This large development in civil aviation has naturally brought with it many improvements in service and facililies. Landing fields have increased in number and have been improved in quality. Regulations regarding pilote have been revised, and extensive research in regard to power plants has been carricd on.

Interesting investigations have also bcen carried out to minimize the effects of mist and fog by mechanical dispersal, to secure the illumination of landing grounds, and to produce mechanical apparatus to cause machines to flatten out automatically before touching the ground. Methods have also been investigated for obtaining instruments to indicate accurately to the pilot his position in relation to the airdicme, and his height above the ground.

The Department of Rescarch has been paying special attention to the development of new trpes of power plant.

If these cxperiments are succersful, it $\pi$ ill be possible to ise a fuel of a ligher flash point, thus increasing both safety and cheapness.

Several new designs of aircraft with facilities for making adjustments to the engines during the flight are being made, and a satisfactery engine starter for use ors the ground is now available.

The xeport states that a mireless direction finder apparatus, which had been installed at Croydon, proved to be of great value. It enables aircrait to correct their course in thick weather. The equipment of aircraft with wireless telephones is becoming more common, as it has been found to be of great assistance to navigation.

Names of towns and railway junctions around London are being so marked that they can bo seen from the air, and electric landing lights for indicating the direction of landing are being installed at the Croydon Airdrome.

The Air Ministry has given assistance to insurance com1 nnics to establish aviation insurance on a sound basis. Lloyds have issued a civil aircraft record, the first publicaton of ite kind in any country.

## GENERAL MOTORS STOCK WIDELY DISTRIBUTED

## Big Company Now Owned by 49,035 Individual Shareholders

There are at present 49,035 stockholders of record holding stock in the General Motors Corp., which figure gives the widest distribution in the history of the organization. This number compares with 1,927 stockholders of record at the close of the first quarter in 1917. From that time on the increase has been steady with an approximate increase during the past year of 22,000 in common holdings of small investors alone. Publication of this list, which accompanied dividend checks mailed out on February 1, marks an absolutely new departure for General Motors, and in some quarters, is interpreted as an indication that the policy of the du Pont interests, now in control, will be to keep stockholders informed from time to time of the effairs and progress of the company.

The 49,035 stockholders of record January 10, 1921, are divided as follows: common, 28,434 ; debenture six-percent stocks, 9,758 dobenture seven-percent, 7,79 , and preferred six-Fercent stock, 3,064 . The present number of holders is double the number of record for the first quarter of 1920 , which was 24,148 . Of the 24,887 increase during the past year, it is significant to note that practically all of this increase has been in the common holdings of small investors. From 6,553 common stockholders on December 31, 1919, the number has grown to 28,434 on January 10, 1921.

The increase in the number of shareholders has been gradual during the past four years, and in practically every instance, each quarter has registered a gain over the preceding one.

Largely instrumental in bringing about the rapid gain in holders recorded in the past year was the splitting up of shares of common stock on' the basis of ten shares of no par value for each one share of $\$ 100$ par, which took place during the year. This, of course, made it possible for investers of small means to buy in General Motors stock, whereas a year ago this class of investor was more or less excluded.

Many car owners are suending time and effort to kecel their radiators cool when it would be much better for tho engine if the water in the radiator. was kept hot. Manufacturers place enough radiating surface on their cats to insure cooling of the engine under extreme conditions, say climbing $a$ long hill at 110 degrees in the shande. Now, it is just common sense that if the matiator is dosigned wo it will cool properly and adequately lunder extreme conditions, as it must be, it will keep, the motor too comb when the temperature of the air is low. The sight temperature for the motor to rum at is ahout 140 degrees Faherentseit. It this ternperatuse your oil will lubriate most frocly and you will get most power.


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There is no question but that there is still plenty of room for improvement, particularly in regard to comfort.


Holbrooli Brongliam on a Delage chassis
As ret no serious attemit has been made by American coachbuilders to produce seats adjustable both fore and aft and as to inclination. It is true that a few touring bodies have been made with the front seats adjustable in the fore and aft direction after raising the cushions and unfastening a few nuts. It may be questioned, however, whether the occupants ever trouble to adjust the seats under the cirrumstances. What is nceded is a tiack with an accessible clamping lever, fixing the seat in the desired position.

Although the driving seat of a touring or sedan body, for instance, may bo designed especially for the owner, it


Cabriolet by Brauster on a Breuster chassis


A Bronigham by Locke on a Locomobile chassis
should be remembered that a friend or chauffeur occasionally drives. Eventually, too, the owner will endeavor to sell the car and does not desire to limit prospective purchasers to men of his own dimensions.

There are no American bodies having adjustable rear seats, but at the last Automobile Salon in New York there was noticed a Million-Guiet enclosed drive limousine on a Panhard having rear seat cushions which could be pulled out four inches, thereby increasing the inclination of the back.

American coachmakers lead the world in the design of auxiliary seats which are more comfortable and fold more neatly than is the case with the average foreign seat.

Neither the seat nor back custions of inost of the current open bcdies are sufficiently inclined for maximum com-


## Brewster Sedan on Roills-Royce chassis

fort. American designers do not yet realize that a semireclining position is the only possible one for traveling long distances in comfort.

With regard to the external design of custom bodies, the desirable appearance of length is being giined by a rather liberal use of horizontal mouldings.


Healey four passenger body on a Locomobilë chassis

## FIGURES SHOW IMOTOR CAR IS ONE（OF WORLD＇S GREATEST UTILITIES

Users Testify to Remarkable Increase in Their Efficiency

There are $7,600,000$ passenger cars in the United States and about 900,000 trucks．Of the motor cars 90 per c nt are used more or less for lusiness， 60 per cent of the mileage is utilitarian，and the full service of trucks，of colurse，is deroted to commercial efficiency．

Fully as significant are the facts that are being brought te light concorning the productive use of the passenger car．

The readers of current magazines have doubtless seen in the newspapers or magazines that compiled testimony of thousands of car owners shows that the user increases his productivity 57 per cent as a result of owning an automobile．

City readers may feel that this is a large figure，but the suburban dweller，the farmer，the villager，the man who has suffered from rail strikes，the country banker，the doctor，will know that this figure is a moderate expression of an everyday human experience．

Various classes of business and professions are finding out that cars are essential．The degree to which the auto－ mobile is useful to some of the major occupations may be seen in the following figures averaged from the reports of car owners in these groups：

Occupation．
Real Estate and Insurance Doctors ．．
Salesmen ．．． 103 Clergymen ．．．．．．．．．．．．．．． 98 County Superintendents ．．．．．． 72
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Bankers（incl．rura］）．．．．．．．．．3：3
Merchants ．．．．．．．．．．．．．．．．．25
Thawters ．．．．．．．．．．．．．．． 23
Increased Efficiency．

133 per cent
104 2 1 $3: 3$ 3

These figures speak for themselvos as an index of the busidoss field for passenger cars and trucks．

## ATTRACTING PEDESTRIANS BY NIGHT DISPLAY．

The Kam－Kaderbeck Co．，distributers of the Kissel and Auburn cers in Juffalo，hit upon an effective seheme for attracting to its machines the atiention of pedestrians：and others who pass its salesroom at night．

The company placed in the show room folw enclosed cars，Kissel sedan and coupo and an Auburn sedan and coupe． These cars had boen wired，and to the wiring there had beon attached an electrical device that worked automatically so that the cars were one moment＂all lit up＂and the next moment pluggod in darknoss．

The sudden illumination of the（ears wats wh mexpected to the passorby lie invariably remained long enomgh for son the cars lighted up two or thiee times in sucesession，and when he wont away he carried with him the implession that the machines ho had looked upon were sevelly very desirable atumomiles．

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## MANY DEMANDS FOR STEEL IN U．S．

Rail and Building Orders May Hold Up Motor Car Makers＇ Supplies

Angles from which different prominent trade observers view the automobile industry are not only widely divergent but uncommonly interesting in their contrasting conclu－ sions．There has been considerable discussion，it will be reeallcd，and much thought expended in formulating the logic of the situation as applied to the possible reduction of prices，the reasoning being based on factors that would scem to indicate a reduction in the price of prime necessi－ ties，steel and labor being the two factors most prominent－ ly menioned in this connection．Therefore it comes as a sort of mild shock to find other and equally eminent author－ ities pursuing a line of reasoning directly opposite in its con－ clusions．But their alguments are set forth with a clarity which compels attention．

These last point out that the railroads must have some－ where about $69,000,000$ tons of rails，which are needed simultaneonsly－that when the dam that now restricts buy－ ing is broken，not only will the railroads come into the market for these heavy requirements，but that the same release will affect the structural steel and other building trades －all large consumers．For this reason it is held that when the automotive trades again come into the market they are likely to find not only steel prices at present levels，but there is every likelihood that they may actuatly rebound even higher，through the operation of the well－known law of supply and demand．

Labicr，on the other hand，while now operating on a plane of admittedly higher efficiency，has not suffered any appreciable reduction in wages，take the industry by and large，while the increased proportion of overhead cost result－ ing from severe curtailment of operations must of necessity be sqread over the business for quite some time to come． This，it is implied，is not only a cause for executive concern， but an absolute factor in keeping costs from rapid shrink：age

Higher costs，rather than lower costs，are，if anything， in the anticipation of the experts reforred to．Setting this line of thought，which indicates a possibility of further price increases，against the reasoning formerty roporled in these columns，that prices canmot be expected to mowe downwam generally until sted furces have broken，raffims the assor－ tion that has been so often made that retail price adjustment： are still a very vague and indeterminate prosped，which seems at the moment to lie a long way olf．

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## THE BIG

## MOTOR SHOW

## HOW ONE GARAGE MAN SOLVED THE HELP PROBLEM

## By Offering Bonuses He Got His Men Interested In Their Work

Ereryone likes to know that his work is appreciated and vorr few seem to object to substantial recognition of it. William J. Smith, proprictor of the crarage Fernwood Supreme, Philadelphia, acknowledges this through the system he is employing among his workers as an incentive and reward.

His night manager receives one-half of one percent of the profits of his employer on all storage for the year. Maybe that doesn't make him hustle to make custom! On the other hand, should a fender of a customer be damaged in the garage through carelessnoss, or any like untoward incident happen-prop! I fine comes out of the night manager's bonus-just like that. So he is careful, as well as hustling.

His washers get twenty-five cents every time they wash an extra car above "live" storage and also one-half of one percent of their employer's profits for the year. So this acts in the same gentle, stimulating way for them.

The day manager gets one-half of one percent of his employer's profits on the amount of accessory trade in a year and all the garage hands-who are good salesmen, too-
get a dollar for every tire they sell, irrespective of its size or price.

For a time, at least, it wis a hard job to get mechanics for garage work in Philadelphia and when they were hired they came-well, somewhat high. Smith solved the problem, after a whilc, by not hiring any mechanics, but by allowing a couple of expert and enterprising young menfirst rate mechanics-to have space for their operations in his roonyy garage, rent-free. The stipulation, however; is that they do work for his customers, when needed, at the rate of one dollar an hour for their labor, Smith to be paid just ten percent of their profits.

He is now rid of the trouble of hiring, maintaining and acting as arlitrator among mechanics and is assured good work for his customers-and what is more, work on the spot, immediately. If at any time he should decide the work was not right, or they were not keeping their agreement, he could oust the men, who, however, are well content to do a good business in first-rate quarters, rent-free, with assurance of continuous custom.

Hint-there are plenty of young mechanics who would like a similar opportunity, rent-free.

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Star Garage.

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A. 8 .
B. S. A.

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Fei Lung Company
Morimura Garage Co
Star Garage
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[^68]1

## VULCANIZING <br> VULCANIZING


 77

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## Cold Weather Engine Troubles

What winter brings to the Automobile repair man.
Why lubrication must be watched with extra care.

Many repair men find winter their busiest season.
More electric starters are brought in for repairs. Garage men and service stations are called upon to techavge more batteries. Mone motorists come in, saying "My oil gamge is not working."

That is why correct lubrication is of particular importance to every car owner during the winter season.

Some cars should use the same oil in winter as in summer. Cthers should change to a lighter oil under winter conditions. If depends upon the design of the engine and the lubricating system.

To provide efficient lubrication, the oil must reach every frictional surface in the engine. In many cars, an oil thickened by freezing temperatures will not circulate freely and reach these frictional surfaces.

In such cases, the thickened oil means sluggish engine action. It causes balky action in starting the engine. Frictional surfaces rub against each other without the protection of a perfect oil film. Under such circumstances, all of the evil eflects of in correct lubrication may follow.

It is of no use to blame the oil pump if the oil coos not circulate.

The Responsibility lies with the lubricating oil
A car owner cannot determine for himself whether or not his engine requires a different oil in the winter than in summer. There are too many determining factors entering into this question. It is a problem for technical experiment and analysis.

The Vacuum Oil Company's Board of Automotive Engineers has carefully analyzed the summer and winter lubricating requirements of every make and model of automobile. The result of this analysis is shown in the Chart of Pecommendations.

In changiny from a summer to a winter recommendation, the proper method is to drain all the old oil from the crank-case when the engine is warm; pour in a quart of clem, light lubricating oil (do not use kerosene): turn the engine over a fow time:, by hand or starter, to cleanse the crank-case ; drain out this cleansing oil; and then refill with the rorrect grade of (iargoyle Mobiloils for winter use.

The results will surprise you in engine debiemere and in freedem from "cold weather " troubles.

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c



[^0]:    2248. 

    20 Kiukiang Road, Shanghai.
    " Pneumatic "

[^1]:    ABBREVIATIONS,-"A.Kent" Atwater Kent, "A.C"Allis-Chalmers, "A-Tite" Anto-Lite "Conn" Connechiut, "Ci\& D" Citar \& Mavis, "Eisman"
     Clincher "QDR" Quick Detachable Reversible. NOTE-30x.21r means that the rear tires are $30 \mathrm{x} \cdot \frac{1}{2}$ and the front are smaller, zi3lxt ("tires on sedan,

[^2]:    a. considerably higher figure per unit for her purehases of American cars in the year 1918-19 than she did in 191:3.

    An interesting factor in the actual British car production, says tho Chamber, is Hes combmation of automobile firms representing a capital of $\$ 20,000,000$
     (axs since 1919, or roughly, 1,000 per month, up to Mateh 1 The estimate mata by these british moter- -at mannifertmers seives a production of 7,000 cars for the period condin!? Octaber 1920. If this estimate is realized, and there aro me further tatoor troubles to hatrdie:p, the moter inmbustry Britain's clain lo gmantily prodnction may be considmed als ostiablished.

[^3]:    The Aircraft MIfg．Co．，Ltd．，London．
    British Aerial Transport Co．，Ltd．，London．
    The British and Colonial Aeroplane Co．，Ltd．，Bristol．
    
    Borulton and Paul，Ltd．，Norwich，England．
    The English Electric Co．，Ltd．，Iondon．
    （rlendower Aircraft Co．，Isondon
    
    
    Grahame Thite Compans，Itd．，London．
    The supermarine Aviation iVks．，Ltd．，Southampton， Fholatal．
    1．1：law and ion I．al．I ondon．
    Sopwith Aviation and Engineering（＇o．，Ittd．，London！
    
    Vickers，Itd．，Man hewer．
    Fiat，Turin．
    Societie Yarancio＇Ansoldo，Rome

[^4]:    Lare stocks af our Shanghai Ditens amb stome 17 MUSEUM ROAD, SHANGHAI.

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     (theneat Mater- Inp.

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     .jon: Toruglay, 5,000; Tenezucla, 11,500; Miscellaneous
    

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[^14]:    1!: ソ
    c. 2248. 20 Kiukiang Road, Shanghai. "Pneumatic"
    2073. Dickinson Hall, Tientsin.
    2270. E. 3, Tong Chang An Chien, Peking.

[^15]:    Continued on Page 57.1

[^16]:    ABBREVIATIONS.-"A.Kent" Atwater Kent, "A-C" Allis-Chalmers, "A-Lite" Anto-Lite, "Conn" Connecticut, "G\&D", Gray \& Daris, "Eisman' Fisemann, "L-N" Leece-Neville, "N.E." North East "Wsths" Westinghonse, "W. Lard." Ward Leonard, "sS"Straight Side, "QD" Quick Detachathe, "( Clincher "QDR" Quick Detachable Reversible. NOTE-30x 3 2r means that the rear tires are $30 x 32$ and the front are smaller. $2: 31 \mathrm{xf}$ (" tires on sodan.

[^17]:    

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[^19]:    

[^20]:    American mail should be addressed to The Oriental Motor Box No. 749, United States Postal Agency, Shanghai.

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[^27]:    American mail should be addressed to The Oriental Motor Box No．749，United States Postal Agency，Shanghai．

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    MOTORING MOTOR CYCLINC

    ## AVI－TIION

    
    Rogistered int the Chincese bose Offlee as a Nownpaner

[^32]:    Wentiene? er I Ing bil

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[^38]:    "Boos for Good Roads in China"

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[^40]:    upholatury. The Americans pander to the native taste and fimbin there bois work in the vivid shades so dear to the Chmommi - lean: cant in China being purchased for their notour rutbee thom efficiency and price."

[^41]:    
    
    
     mell: was heard till swom days laters. When a Damat meamer reported their resche.

[^42]:    TIENTSIN, PEKING, HANKOW, TSINGTAO

[^43]:    

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[^45]:    Ninety-sezen cities in America recoltly reported minctr-sce:口 Overland Sedans as averaging $2 \overline{5}$. ${ }^{\prime}$ miles per gallon of gers. one of the reasons for the popularity of this remarkable can

[^46]:    recording fare registers, and recording taximeters. 'i:sin is, a compact instrument, weighing but seven pounds, whe: in $\vdots$

[^47]:    (Continued on page 68)

[^48]:    (Continued on page 53)

[^49]:    (Continued on Page 78)

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[^51]:    (Continued on page 82)

[^52]:    

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[^54]:    "Boost for Good Roads in China"

[^55]:    
    
    

[^56]:    (Continued on Page 93)

[^57]:    Sole Agents
    Renault Car and Trucks.
    Michelin Tyres, Straight Side and Clincher Types.

[^58]:    "Boost for Good Roads in China"

[^59]:    "Boost for Good Roads in China"

[^60]:    Spacious and Luxurious Dining and Reception Rooms. Bedrooms with private Baths and Toilets.
    First Class Cuisine and Selected Cellar, under Foreign supervision. Central Heating, Electric Light, Modern Sanitary Arrangements. The only hotel in Tientsin with own water supply. Artesian Well 250 ft . deep.
    Hotel Motor-Omnibus and Porters meet all Trains and Boats.
    Cable Address "ASTOR"

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    九
    The above（iovels are manufictured at anm
    
    
    
    三 mmelerate price 14
    號 23．Kiukiang Road，Corner of Honan Road，lij － $111 \mathrm{~N}, 1111$

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[^63]:    (Contimued on page i5.

[^64]:    (Continued an putge i!)

[^65]:    Sole Agents $\left\{\begin{array}{l}\text { Renault Car and Trucks. } \\ \text { Michelin Tyres, Straight }\end{array}\right.$
    Michelin Tyres, Straight Side and Clincher Types.

[^66]:    U'moading motor cors at shathyhiri

[^67]:    (Continued on Page 58)

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